Site Investigation/Removal Action Work Plan for

J-Pitt Melt Shop
3151 S. California Avenue
Chicago, Illinois

Prepared for

M.S. Kaplan Company
55 E. Monroe
Suite 4620
Chicago, Illinois

Prepared August 2001
Burns & McDonnell Project No. 27695

Burns & McDonnell
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SITE INVESTIGATION/REMOVAL ACTION WORK PLAN

for

J-PITT MELT SHOP
3151 S. CALIFORNIA AVENUE
CHICAGO, ILLINOIS

Prepared for

M.S. KAPLAN COMPANY
55 E. MONROE
SUITE 4620
CHICAGO, ILLINIOS

AUGUST 27, 2001

BURNS & MCDONNELL PROJECT NO. 27695

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Executive Summary

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has been retained by M.S. Kaplan Company to prepare a Site Investigation/Removal Action (SI/RA) Work Plan (Work Plan) at the J-Pitt Melt Shop (Site) located at 3151 South California Avenue, Chicago, Illinois. The Site is comprised of approximately 6 acres of land improved with one building, approximately 240,000 square feet in size. The building consists of three sections: the furnace area at the south end; the billet finishing area at the center; and the office, maintenance and receiving areas at the north end. A guard house is located inside the western fenced area of the property. The Site is bordered to the north by a railroad, to the south by the Chicago Sanitary and Ship Canal, to the east by a scrap yard, and to the west by California Avenue and other industrial and commercial operations.

According to the U.S. Environmental Protection Agency (USEPA) Administrative Order by Consent (AOC) for the J-Pitt Melt Shop, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), formerly known as the Metropolitan Sanitary District, along with Ketler-Elliott Erection Company entered into a lease of the Site in 1918. The lease was assigned to Hansell-Elcock Company in 1923. In 1961, Hansell-Elcock assigned the lease to California Auto Reclamation Company (more than 50% owned by M.S. Kaplan Company). J-Pitt Melt Shop, Inc. was a sublease at the Site and utilized the Site for production of steel billets and blooms from scrap steel between approximately 1994 to 1996. J-Pitt Melt Shop, Inc., was incorporated in Illinois in 1994 and involuntarily dissolved in 1998. In 1997, its parent company filed a voluntary petition in United States (U.S.) Bankruptcy Court, Western District of Pennsylvania, under Chapter 11 of the U.S. Bankruptcy Act. The case was dismissed in 1999.

On April 5, 2001, the City of Chicago Department of Environment (CDOE) observed an oil-based waste being released from the sheet pile wall along the south side of the Site and flowing into the Chicago Sanitary and Ship Canal. CDOE also observed stored artillery shells. The CDOE requested assistance from the U.S. Army and the USEPA to address the artillery shells and oil impacts.

During a May 11, 2001 telephone interview, arrangements were made for the disposal of munitions by M.S. Kaplan through ATF. Mr. Jim Allison, Supervisory Special Agent for the Explosives Enforcement Group of the U.S. Army, indicated that the artillery shells noted by CDOE were received and have been "destroyed" by the U.S. Army "EOD Unit" from Fort McCoy, Wisconsin, approximately one week after receipt of the artillery shells.

The USEPA conducted assessment activities at the Site and deployed a boom along the southern edge of the Site to contain the release of oil into the Chicago Sanitary and Ship Canal. The J-Pitt Melt Shop USEPA AOC identifies the oil source area as possibly from underneath the current building in the vicinity of the electrical switch room. The USEPA guided assessment activities consisted of soil and dust field screening and sampling for laboratory analysis at specified areas of the Site. The USEPA guided investigation identified Site impacts of total lead, total cadmium and polychlorinated biphenyls (PCBs).

The USEPA guided field screening also identified areas at the Site with possible lead and cadmium impacts; however, Burns & McDonnell recommends that soil in these areas be collected for laboratory analysis to verify impacts.

The USEPA AOC for the J-Pitt Melt Shop identifies the following hazardous materials located within the facility: Resinous material, containing 54,000 ppm of polychlorinated biphenyls (PCBs), appeared to have spilled from a capacitor; suspect electric arc furnace dust (K061) located in baghouses within and outside of the facility; lead, chromium and cadmium identified in dust and ash primarily in the furnace and billet finishing areas; and drums and containers with acids, caustics, oils and solvents located throughout the facility. Other environmental conditions identified by the J-Pitt Melt Shop USEPA AOC include: radioactive sources of Cesium-137 in mold level control devices; friable suspect asbestos pipe insulation, broken bags of granular and powderous materials, and a release of oil-based waste into the Chicago Sanitary and Ship Canal.

Environmental concerns to be investigated as part of this SI/RA Work Plan at the Site include:

- Soil and dust within the floors of the facility, primarily in the furnace and billet finishing areas,
- Liquids and/or solids inside approximately (124) 55-gallon drums, (37) 25-gallon and 5-gallon drums, and approximately 150 smaller containers,
- Radioactive source materials containing Cesium-137,
- Resinous material, containing 54,000 ppm of polychlorinated biphenyls (PCBs), apparently spilled from a capacitor,
- Observed release of oil-based waste into the Chicago Sanitary & Ship Canal,
- Open sumps and pits inside the facility,
- Two baghouse units, one inside and one outside of the facility, which may contain electric arc furnace dust,
- Suspect slag and electric arc furnace dust piles outside of the facility,
- Damaged dry goods located within the facility,
- Friable suspect asbestos pipe insulation fallen onto the floor of the facility.

Based upon the concerns previously identified, Burns & McDonnell's SI/RA will include the following activities:

1. Stage, sample, and/or secure identified Site wastes and residual materials, including the following: 55-gallon drums and smaller containers; baghouse dust; liquid in pits, sumps and tanks; bagged waste; radioactive materials; and friable suspect asbestos from pipe wrap and other sources.

2. Investigate the oil spillage into the canal to determine if the source area is from the Site, in addition to controlling oil seepage into the canal.

3. Investigate soils, dust, ash and debris and develop a risk assessment to determine the applicable surface and subsurface soil remediation goals for the Site under a Comprehensive Environmental Response Compensation and Liability Act (CERCLA) removal action, or determine applicable disposal arrangements.

4. Investigate and prepare removal and disposal arrangements of the drum materials based on waste characterization analysis and visual analysis of the drum(s) condition.

5. Develop and implement disposal arrangements of the identified Cesium-137 radioactive materials as exempt radioactive materials with the coordination of Ronan Engineering, the original manufacturer of those devices.

6. Develop and implement disposal arrangements, if any, of any other hazardous wastes, after investigation activities identified as part of this SI/RA Work Plan.

The overall objective of the Site Investigation and Removal Action (SI/RA) Work Plan is to investigate the hazardous substances identified by the United States Environmental Protection Agency's (USEPA) Administrative Order by Consent (AOC) pursuant to Section 106 of CERCLA, 42 United States Code Section 9606.

This work plan outlines anticipated field activities, sampling procedures and protocols, analytical methods and quality assurance/quality control (QA/QC) methods and procedures that will be followed during the SI/RA. Investigation results will be summarized and evaluated in monthly progress report(s) as indicated in the J-Pitt Melt Shop USEPA AOC. Additional subsequent investigation or removal activities will be identified in subsequent monthly progress report(s) and/or work plans.

* * * * *

1.0 Introduction

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has been retained by M.S. Kaplan Company to prepare a Site Investigation/Removal Action (SI/RA) Work Plan (Work Plan) at the J-Pitt Melt Shop located at 3151 South California Avenue, Chicago, Illinois (Site). The Site is comprised of approximately 6 acres of land improved with one building, approximately 240,000 square feet in size. The building consists of three sections: the furnace area at the south end; the billet finishing area at the center; and the office, maintenance and receiving areas at the north end. A guard house is located inside the western fenced area of the property. The Site is bordered to the north by a railroad, to the south by the Chicago Sanitary and Ship Canal, to the east by a scrap yard, and to the west by California Avenue and other industrial and commercial operations.

The Site is located in Section 35, Township 39 North, Range 13 East in the City of Chicago, Illinois in Cook County (Figure 3). The Site has historically been utilized for steel processing and related industries. The Site is currently leased by M.S. Kaplan and was last subleased to J-Pitt Melt Shop, Inc. between approximately 1994 to 1996, for production of steel billets from scrap steel.

This work plan outlines anticipated field activities and sampling procedures and protocols that will be followed during the SI/RA. Analytical methods and quality assurance/quality control (QA/QC) methods and procedures are contained in Section 4 and 5 of this Work Plan. Investigation results will be summarized and evaluated in a monthly progress report(s) as identified in the J-Pitt Melt Shop USEPA AOC. Additional work plan(s) will be prepared for removal action based on the results of the investigations outlines herein.

This work plan is organized into the following sections:

- **Section 1.0 Introduction**—presents SI/RA objectives, project team organization and anticipated schedule.
- **Section 2.0 Site Background and History**—summarizes background information, potential chemicals that may be found at the Site, site geology and hydrogeology and surrounding land uses.
- **Section 3.0 Site Investigation Plan**—presents and discusses sample collection locations, anticipated number of samples to be collected, and analyses to be performed.
- **Section 4.0 Field Sampling Plan**—outlines SI/RA activities, describes sample locations, sampling procedures, handling procedures for SI/RA derived wastes, surveying procedures and presents analytical methods and detection limits.
- **Section 5.0 Risk Assessment**— provides the approach to the risk assessment which will be to follow the basic and supplementary guidance by USEPA for risk assessment of Superfund sites.

- **Section 6.0 Quality Assurance/Quality Control (QA/QC) Project Plan**—presents site specific and general QA/QC procedures.
- **Section 7.0 References.**
- **Appendix A**—contains field sampling procedures for collection of volatile organic soil samples.

Field activities associated with this SI/RA will be performed in accordance with Burns & McDonnell safety standards documented in the *Site Health and Safety Plan for the J-Pitt Melt Shop, Chicago, Illinois (July 2001).*

1.1 INVESTIGATION OBJECTIVES

The overall objective of the Site Investigation and Removal Action (SI/RA) Work Plan is to investigate the hazardous substances identified by the United States Environmental Protection Agency's (USEPA) Administrative Order by Consent (AOC) pursuant to Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 United States Code Section 9606.

This work plan outlines anticipated field activities, sampling procedures and protocols, analytical methods and quality assurance/quality control (QA/QC) methods and procedures that will be followed during the SI/RA. Investigation results will be summarized and evaluated in monthly progress report(s) as indicated in the J-Pitt Melt Shop USEPA AOC. Additional subsequent investigation or removal activities will be identified in subsequent monthly progress report(s) and/or work plans.

The USEPA AOC for the J-Pitt Melt Shop identified the following hazardous materials located within the facility: Resinous material, containing 54,000 ppm of polychlorinated biphenyls (PCBs), appeared to have spilled from a capacitor; suspect electric arc furnace dust (K061) located in baghouses within and outside of the facility; lead, chromium and cadmium identified in dust and ash primarily in the furnace and billet finishing areas; and drums and containers with acids, caustics, oils and solvents located throughout the facility. Other environmental conditions identified by the J-Pitt Melt Shop USEPA AOC include: radioactive sources of Cesium-137 in mold level control devices; friable suspect asbestos pipe insulation, broken bags of granular and powderous materials, and a release of oil-based waste into the Chicago Sanitary and Ship Canal.

The following environmental concerns for investigation as part of this SI/RA Work Plan at the Site are separated as follows:

- Soil and dust within the floors of the facility, primarily in the furnace and billet finishing areas,
- Liquids and/or solids inside approximately (124) 55-gallon drums, (37) 25-gallon and 5-gallon drums, and approximately 150 smaller containers,
- Radioactive source materials containing Cesium-137,

- Resinous material, containing 54,000 ppm of polychlorinated biphenyls (PCBs), apparently spilled from a capacitor,
- Observed release of oil-based waste into the Chicago Sanitary & Ship Canal,
- Open sumps and pits inside the facility,
- Two baghouse units, one inside and one outside of the facility, which may contain electric arc furnace dust,
- Suspect slag and electric arc furnace dust piles outside of the facility,
- Damaged dry goods located within the facility,
- Friable suspect asbestos pipe insulation fallen onto the floor of the facility.

Based upon the concerns previously identified, Burns & McDonnell's SI/RA will include the following activities:

1. Stage, sample, and/or secure identified Site wastes and residual materials, including but not limited to the following: all 55-gallon drums and smaller containers; baghouse dust; liquids in pits, sumps and tanks; bagged waste; radioactive materials; and friable suspect asbestos from pipe wrap and other sources,

2. Investigate the oil spillage into the canal to determine if the source area is from the Site, in addition to maintaining control of oil seepage into the canal,

3. Investigate soils, dust, ash and debris and develop a risk assessment to determine the applicable surface and subsurface soil remediation objectives for the Site applicable to this CERCLA removal action, or determine applicable disposal arrangements,

4. Investigate and prepare removal and disposal arrangements of the drum materials based on waste characterization analysis and visual analysis of the drum(s) condition.

5. Develop and implement disposal arrangements of the identified Cesium-137 radioactive materials inside the billet formers and within a box outside as exempt radioactive materials with the coordination of Ronan Engineering the original equipment manufacturer of these and non-hazardous radioactive devices.

6. Develop and implement disposal arrangements, if any, of any other hazardous wastes, after investigation and risk assessment activities identified as part of this SI/RA Work Plan.

Upon completion of this SI/RA, an Engineering Evaluation/Cost Analysis (EE/CA) as outlined by the Superfund Accelerated Cleanup Module (SACM) will be prepared to address removal activities and associated costs.

1.2 PROJECT TEAM ORGANIZATION

Figure 1 presents the project team organization chart for this SI/RA.

1.3 PROJECT SCHEDULE

Burns & McDonnell anticipates implementing the SI field activities within thirty (30) days of final approval from the USEPA of the submitted SI/RA Work Plan followed by monthly progress report(s). The field activities proposed in this SI/RA Work Plan are estimated to take three weeks. Burns & McDonnell anticipates receiving the laboratory data within two weeks of the completion of field activities included as part of this SI/RA Work Plan. The first monthly progress report will be completed within 30 calendar days of the USEPA approval of the SI/RA Work Plan and each subsequent month thereafter of Burns & McDonnell's client-approved involvement in this project. Upon completion of this SI/RA, an Engineering Evaluation/Cost Analysis (EE/CA) as outlined by the Superfund Accelerated Cleanup Module (SACM) will be prepared to address removal activities and associated costs.

* * * *

2.0 Site Background and History

The Site is located in Section 35, Township 39 North, Range 13 East in the City of Chicago, Illinois in the County of Cook and is approximately 6 acres in size (Figure 3). The Site is bordered to the north by a railroad, to the south by the Chicago Sanitary and Ship Canal, to the east by a scrap yard, and to the west by California Avenue and other industrial and commercial operations.

According to the USEPA, the J-Pitt Melt Shop, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), formerly known as the Metropolitan Sanitary District, along with Ketler-Elliott Erection Company entered into a lease of the Site property in 1918. The lease was assigned to Hansell-Elcock Company in 1923. In 1961, Hansell-Elcock assigned the lease to California Auto Reclamation Company (more than 50% owned by M.S. Kaplan Company). J-Pitt Melt Shop, Inc. utilized the Site for production of steel billets and blooms from scrap steel between approximately 1994 to 1996. J-Pitt Melt Shop, Inc., was incorporated in Illinois in 1994 and involuntarily dissolved in 1998.

The Site is improved with one building, approximately 240,000 square feet in size. The building consists of three sections: the furnace area at the south end, along the banks of the canal; the billet finishing area at the center; and the office, maintenance and receiving areas at the north end.

2.1 PREVIOUS INVESTIGATIONS

On April 5, 2001, the City of Chicago Department of Environment (CDOE) observed an oil-based waste being released from the sheet pile wall along the south side of the Site and flowing into the Chicago Sanitary and Ship Canal. CDOE also observed stored artillery shells. The CDOE requested assistance from the U.S. Army and the USEPA to address the artillery shells and oil impacts.

During a May 11, 2001 telephone interview, arrangements were made for the disposal of munitions by M.S. Kaplan through ATF. Mr. Jim Allison, Supervisory Special Agent for the Explosives Enforcement Group of the U.S. Army, indicated that the artillery shells noted by CDOE were received and have been "destroyed" by the U.S. Army "EOD Unit" from Fort McCoy, Wisconsin, approximately one week after receipt of the artillery shells.

On April 6, 2001, the USEPA's On-Scene Coordinator (OSC), Brad Benning, mobilized Ferguson Harbor, Inc., to the site to assist with site work. To control the oil sheen on the Canal, several pieces of an absorbent boom were placed in the Canal. Further investigation of the Site disclosed drums and other vessels containing oils, grease, baghouse dust, antifreeze, acids, hydraulic fluid, and other unknown liquids; transformers that appeared to have leaked; open pits with unknown contents; large slag and dust piles, and suspect asbestos containing materials. In addition, the U.S. EPA and Illinois Department of Nuclear Safety (IDNS) performed radiation survey throughout the site building. Two large steel kettles in section two were identified as containing radioactive materials, specifically Cesium-137. Another source of Cesium-137 was discovered in a room between the billet finishing area and the furnace area.

On Monday, April 9, 2001, a four person crew from Ferguson Harbor, along with equipment including a Bobcat, mobilized to the site. The Ferguson Harbor crew began setting up a staging area in section one for the drums, tanks, transformers and other containers located throughout the facility. A sea curtain was placed in the Canal, in addition to the existing absorbent boom, to further contain the oil sheen.

On Monday, April 9, 2001, USEPA also mobilized the Superfund Technical Assessment Team (START) to the Site. START performed air monitoring throughout the site and collected samples to help further identify any threats to human health and the environment. START collected six samples from locations throughout the building. START collected a sample of oil discovered on the floor of a transformer room near the furnace area and used a Chlor-n-oil, PCB field test kit to determine if PCBs were present in the oil. The result from the test kit was less than 50 parts per million (ppm). Therefore, a sample from this area was not sent for analysis. The remaining samples were sent to a laboratory for analysis, four of the samples were analyzed for TCLP Lead and RCRA metals, and the remaining two samples were analyzed for PCBs.

Some of the areas with elevated field screening results were included for laboratory analysis. Of the four samples analyzed for metals, Test America identified concentrations of lead at 856 mg/kg, and chromium at 528 mg/kg and 1,310 mg/kg. Analytical results revealed a sample taken from resinous material apparently spilled from a capacitor on the floor contained a concentration of 54,000 parts per million (ppm) of PCBs. This PCB concentration exceeds the USEPA's *Guidance on Remedial Actions for Superfund Sites with PCB Contamination* remediation objective of 25 ppm for restricted areas.

USEPA initiated an emergency response and arranged for preliminary investigations of the Site. Illinois Institute of Technology (IIT) Research Institute ESAT Region 5 performed the field screening of dust in the facility using an XRF instrument. Certain areas of the Site were gridded to collect composite soil floor samples within each area. Twenty samples were collected for the analysis of lead and cadmium. The results indicate concentrations of lead ranges from non-detectable to 1,254 milligram per kilogram (mg/kg), and concentrations of cadmium ranges from 38 to 639 mg/kg. (However, these results are only field screening and will require additional laboratory analyses of soil samples within these areas to verify field screening concentrations.)

Ferguson Harbor located drums, tanks, and various containers from throughout the building and staged them on-Site. Drums and containers were located throughout the facility, including upper levels of the platforms around the furnace and on top of office rooms located throughout the facility. The contents of the drums located in higher levels were pumped to empty drums on the floor in order to safely remove the drums and their contents from these restricted access areas. A small lab was discovered on-Site. The lab contained small amounts of various acids including nitric acid, muratic acid and hydrofluoric acid. These acids, along with the other chemicals stored in the lab area, were overpacked in five-gallon buckets and staged with the materials.

In an effort to further prevent any oil spills or leaks in the building, Ferguson Harbor drained the large oil reservoirs of several pieces of equipment remaining on site. The oil was pumped into empty 55-gallon drums. As of April 18, 2001, all visible drums, containers, and tanks located throughout the site were staged. In addition, eight gas cylinders and approximately twenty old batteries were found in the building. The final day on-site for U.S. EPA, Ferguson Harbor and START was April 18, 2001.

In summary, the USEPA-guided investigations identified potential impacts of total lead, total cadmium, and PCBs that may exceed risk-based remediation goals for the Site. The field screening also identified areas of the Property that may exceed lead and cadmium risk-based remediation goals for the Site. The laboratory analytical results and summaries of these previous investigations are presented in Appendix A.

2.2 SITE-SPECIFIC PROCESSES AND RESIDUALS

J-Pitt Melt Shop, Inc. last utilized the Site for production of steel billets from scrap steel in 1996. Prior to J-Pitt's occupancy of the Site, various companies subleased and utilized the Site for steel related industries. Review of numerous building plans and detailed drawings of processes at the facility indicate that previous occupants included Charter Electric Melting, Inc, Wisconsin Steel, which is a part of International Harvester, Rocop and California Auto Reclamation Company. Current structures on the Site include one building which consists of three sections: the furnace area at the south end along the banks of the canal; the billet finishing area at the center; and the office, maintenance and receiving areas at the north end. The east exterior end of Site contains a bag house.

On April 5, 2001, the CDOE observed an oil-based waste being released from the sheet pile wall along the south side of the Property and flowing into the Chicago Sanitary and Ship Canal. According to the J-Pitt Melt Shop USEPA AOC, "the source appears to be from under the building structure in the vicinity of the electrical switch room".

The building contains approximately (124) 55-gallon drums, (37) 25-gallon and 5-gallon drums and approximately 150 small containers of various chemicals and oils with potential exposures to nitric acid, hydrofluoric acid, hydrochloric acid, caustics and solvents. According to J-Pitt Melt Shop USEPA AOC, this facility generated K061 dust from its electric arc furnace.

2.3 CONSTITUENTS OF CONCERN

Constituents potentially associated with the former use of the Site for metal melt processing include cyanide and metals (mainly, arsenic, cadmium, chromium, lead and mercury) as well as PCBs associated with oils. The USEPA conducted assessment activities consisting of soil and dust sampling at the Site which identified detectable levels of total lead, total cadmium, total chromium and PCBs.

Occurrence of these constituents is a function of the environment as well as weathering and transport processes present at the Site. The presence of constituents vary by matrix as follows:

- **Air**—Radioactive sources containing Cesium-137 pose a radiation hazard to humans and animals. Friable suspect asbestos has fallen to the floor from the degradation of piping insulation (this was observed by Burns & McDonnell). Two baghouse units are likely to contain electric arc furnace dust (K061), a listed hazardous waste. Dust and ash observed on the floor contains measureable levels of lead, cadmium, and chromium. Many of the raw products remaining on-site are granular and powders containing silicates, which may pose an inhalation hazard.

- **Surface soils**—Hazardous substances from metal melt processing byproducts in soils, largely at or near the surface have the potential to migrate. Most metals and PCBs are likely to persist in a surface soil environment. Volatile Organic Compounds (VOCs) and Semi-volatile Organic Compounds (SVOCs) are either relatively volatile or readily biodegradable and as such are unlikely to persist in a surface soil environment.

- **Subsurface soils**—Metals, PCBs, VOCs and SVOCs may all be present in a subsurface environment. All of these compounds will be analyzed for in subsurface soil samples.

- **Surface water**—Various pits and sumps exist within the facility on the Site. Metals and PCBs may be present in the water within the observed pits, sumps, and lagoons and those constituents will be analyzed from those areas. In addition, an oil-based waste was observed by CDOE and USEPA being released into the Chicago Sanitary and Ship Canal. The dust and ash in the furnace area adjacent to the canal poses and additional source of potential impact to surface waters.

2.4 SITE GEOLOGY, HYDROLOGY AND HYDROGEOLOGY

Burns & McDonnell reviewed several published documents in an effort to understand the regional geological setting in the area of the Site. The Geologic Map of Illinois (Willman 1967) indicates that bedrock beneath the Site is Silurian Dolomite. Based on this map, the approximate depth below ground surface (bgs) to the bedrock surface is generally greater than 50 feet and bedrock is overlain by glacial deposits. *The Quaternary Deposits of Illinois* (Lineback 1979) map indicates that the surface soil at the Site is the Carmi Member of the Equality Formation, which is described as largely quiet water sediments deposited in ancestral lake Chicago. The Carmi Member is described as well bedded silt and some clay (Willman 1975).

The publication entitled Stack Unit Mapping of Geologic Materials in Illinois to a Depth of 15 Meters (Berg and Kempton 1988) indicates that Site soils consist of deposits less than 20 feet thick of the silty Carmi member of the Equality Formation overlying more than 20 feet of clay deposits of the Wedron Formation. Plate 1: Land Burial of Municipal Wastes and Plate 2: Surface and Near-Surface Waste Disposal contained in the publication entitled Potential for Contamination of Shallow Aquifers in Illinois (Berg and Kempton 1984) rate the aquifer susceptibility for the Site as C1 and D2, respectively. For land burial of municipal wastes, a rating of C1 indicates permeable bedrock within 20 to 50 feet of surface, overlain by till or other fine-rained material. For surface and near-surface waste disposal, a rating of D2 suggests uniform, relatively impermeable silty or clayey till at least 20 feet thick and no evidence of interbedded sand and gravel. These aquifer ratings suggest that near surface waste disposal and land burial of municipal waste exhibits a low likelihood of impacting shallow groundwater aquifers and groundwater beneath the Site.

The surface water body closest to the Site is the Chicago Ship and Sanitary Canal (Canal) located immediately adjacent to the south of the Site. Surface water runoff is primarily controlled by the city storm sewer system. Multiple storm sewer inlets are located around the Site which direct most of the surface water into the City of Chicago's combined sewer system. However, surface water is primarily directed toward the Canal to the south.

The groundwater is not used as a potable water source within one mile of the Site. The City of Chicago obtains its municipal water supplies from Lake Michigan and has an ordinance precluding groundwater use in Chicago.

2.5 LOCATION, ZONING AND ADJACENT SITE USES

The Site is zoned Heavy Manufacturing District (M3-4) and is labeled Sanitary District of Chicago (KRITT Chicago Zoning Ordinance 1999). The surrounding area (within approximately 1,000 feet of the Site) is primarily manufacturing. The Sanitary & Ship Canal lies to the south of the Site and railroad tracks lie to the north.

* * * *

3.0 Site Investigation Plan

This section presents and discusses sample collection locations, anticipated number of samples to be collected, and analyses to be performed. The following environmental concerns for investigation as part of this SI/RA Work Plan are identified as follows:

- Soil and dust within the floors of the facility, primarily in the furnace and billet finishing areas (Section 3.1 – SOIL/FLOOR),
- Liquids and/or solids inside approximately (124) 55-gallon drums, (37) 25-gallon and 5-gallon drums, and approximately 150 smaller containers (Section 3.2 – DRUMS),
- Radioactive source materials containing Cesium-137 (Section 3.3 – RADIOACTIVE MATERIALS),
- Resinous material, containing 54,000 ppm of polychlorinated biphenyls (PCBs), apparently spilled from a capacitor (Section 3.4 – RESINOUS MATERIAL),
- Observed release of oil-based waste into the Chicago Sanitary & Ship Canal (Section 3.5 – VISIBLE OIL BASED WASTE OUTSIDE FACILITY),
- Open sumps and pits inside the facility (Section 3.6 – PITS, SUMPS, LAGOONS),
- Two baghouse units, one inside and one outside of the facility, which may contain electric arc furnace dust (Section 3.7 – BAGHOUSE UNITS),
- Suspect slag and electric arc furnace dust piles outside of the facility (Section 3.8 – DUST PILES),
- Damaged dry goods located within the facility (Section 3.9 – DAMAGED DRY GOODS),
- Friable suspect asbestos pipe insulation fallen onto the floor of the facility (Section 3.10 – FRIABLE SUSPECT ASBESTOS).

Table 1 summarizes the information presented in this section.

3.1 SOIL/FLOOR

3.1.1 Sampling

Up to twelve surface soil samples will be collected from the upper 1 feet of the soil horizon of 12 areas within the facility using a one foot-length sampling trier or trowels. Burns & McDonnell will separate each area into four quadrants, which will be composited into one sample from each area. Sampling locations have been selected based on previous laboratory analytical results and field screening data. Figure 3 identifies the segregated areas for investigation. Samples will be collected as outlined in Section 5.1 and analyzed for the metals lead, chromium, and cadmium. Burns & McDonnell will return to the Site to perform one hazardous waste characterization composite on those samples that exceed applicable exposure levels, as determined from the risk assessment.

Based on the results of the risk assessment, Burns & McDonnell may develop and prepare remedial actions for selected areas and implement necessary remedial action.

3.2 DRUMS

Burns & McDonnell will coordinate the removal and disposal of the approximately (124), 55-gallon drums, the 37, 25-gallon and 5-gallon drums, and approximately 150 small containers based on waste characterization requirements. The investigation of the drums and small containers will first be performed to verify contaminants of concern at the Site. This will include opening and visually assessing drum materials.

Burns & McDonnell will initially investigate by supervising hazardous categorization tests on the approximately (124), 55-gallon drums, the 37, 25-gallon and 5-gallon drums and the approximately 150 small containers. The drums will be screened for the following characteristics:

- pH
- Air Reactive
- Water Reactive
- Oxidizer
- Cyanide
- Sulfide
- Radioactive
- Mercury
- Suspected Perchloric
- Suspected Picric
- Peroxides
- PCBs

Based on the results of the hazardous categorization tests, the drums will be segregated in groups of up to ten waste types. Random sampling of the drums within each waste type will be conducted and laboratory analyzed for the required disposal characterization. Liquids within the drums will be sampled using COLIWASA samplers as outlined in Section 4.4.1. A work plan describing drum disposal methods will be prepared after completion of the work described in this section.

3.3 RADIOACTIVE MATERIALS

The exempt radioactive level gauges consisting of Cesium-137 located within the billet formers and inside a box nearby a billet former will be tested and removed by a properly trained radioactive technician from Ronan Engineering. The billet formers themselves will also be tested to confirm that there is no residual radioactivity within the billet formers. After removal from the facility, the radioactive level gauges and any radioactive billet formers will be properly transported and disposed at a facility certified to accept radioactive materials. Burns & McDonnell will document the removal of the radioactive materials, organize the manifestation and determine any disposal requirements of the billets.

3.4 RESINOUS MATERIAL

Burns & McDonnell will visually assess areas previously identified by the USEPA to be impacted by PCBs. These areas include the area where resinous material appeared to have spilled from a capacitor within of the facility.

Three surface soil samples to a depth of 1 foot below ground surface (bgs) will be collected to determine the horizontal extent of resinous materials which contains PCBs using a one foot-length trier or trowels. Samples will be collected and analyzed for PCBs.

After surface soil collection is completed, test pits will be conducted within the facility near the location of the identified resinous material to determine the presence of any suspect transformer oils or any structures leaking transformer oils, if any, into the subsurface soil within the facility to a maximum depth of 8 feet bgs. If suspect transformer oil is visibly encountered, up to five soil samples will be collected from the test pit(s) to verify impact from the suspect transformer oils. The analytical parameters for these subsurface samples include polychlorinated biphenyls (PCBs) and total petroleum hydrocarbons (TPH). Figure 3 depicts the proposed test pit locations. Locations were selected based on identified Site conditions. If proposed test pit locations are inaccessible, they will be relocated during site investigation activities to the nearest accessible point adjacent to the proposed sampling location.

3.5 VISIBLE OIL BASED WASTE OUTSIDE FACILITY

Burns & McDonnell will visually investigate the oil spillage into the canal to determine if the source area is from the Site. This investigation will involve inspection of the canal wall along the south edge of the Site prior to test pit excavation activities.

Burns & McDonnell will inspect and maintain an oil sorbent boom on the Chicago Sanitary and Ship Canal to capture the visible oil-based seeping into the canal. If necessary, Burns & McDonnell will replace the oil sorbent boom and verify proper disposal of the saturated boom to an appropriate disposal facility.

3.6 PITS AND SUMPS

Burns & McDonnell will investigate the extent of impacts related to prior usage of pits and sumps observed at the Property.

Up to six liquid samples will be collected from the open pits and sumps located within the facility. Water samples from these areas will be collected using a pond sampler as outlined in Section 4.4.2. The analytical parameters for these water samples will include PCBs and the metals lead, cadmium and chromium. Based on the laboratory analytical results, a risk assessment may be performed on the exposure to the water identified within the pits, sumps, or lagoons. However, Burns & McDonnell may return to perform one hazardous waste characterization composite on the water for disposal, if most practicable. Burns & McDonnell will identify the forward strategy within the monthly report(s) and/or future work plans regarding liquids within pits and sumps.

3.7 BAGHOUSE UNITS

Burns & McDonnell will determine the approximate quantity of baghouse dust and will collect two soil/dust samples within the baghouses located both inside and outside the facility. The two soil/dust samples will be collected using sampling triers as outlined in Section 4.1. The two soil/dust samples from the two baghouses will be analyzed for disposal characterization parameters such as select R-Code and extractable organic halogens (EOX). Depending on the results of the disposal characterization, Burns & McDonnell will arrange for the appropriate disposal methodology.

3.8 DUST PILES

Burns & McDonnell will collect three dust samples from the suspect slag or electric arc furnace dust piles located outside the facility using sampling triers or trowels. The three dust samples from the suspect slag or electric arc furnace dust piles outside the facility will be analyzed for disposal characterization parameters such as select R-Code and extractable organic halogens (EOX). Depending on the results of the disposal characterization, Burns & McDonnell will arrange for the appropriate disposal methodology.

3.9 DAMAGED DRY GOODS

Burns & McDonnell will collect up to two composite samples from among the damaged dry goods within the facility for disposal characterization using sampling triers or trowels. The two composite samples will be analyzed for a full R-Code, EOX and F-Solvent Scan. Depending on the results of the disposal characterization, Burns & McDonnell will arrange for the appropriate disposal methodology.

3.10 FRIABLE SUSPECT ASBESTOS

Burns & McDonnell will perform site reconnaissance to identify and collect the pieces of friable suspect asbestos pipe insulation fallen onto the floor of the facility. The collected suspect asbestos debris, if any, will be analyzed by polarized light microscopy (PLM) for asbestos content. If the samples reveal that the suspect materials contain more than one percent asbestos, an asbestos abatement contractor will be retained to remove the asbestos debris.

* * * * *

4.0 Field Sampling Plan

This Section presents and discusses investigation and sampling procedures and collection methods, SI/RA derived waste handling and decontamination procedures and analytical methods.

4.1 SURFACE SOIL

Investigation of soils on the floors will be conducted using a foot-length sampling trier or trowel. The trier will be inserted into the waste material at a 0 to 45 degree angle in order to minimize spillage of sample material. Once a core of the material is withdrawn, the sample will be transferred into a sample container with the aid of a stainless steel spatula, labeled and transferred to a laboratory for analysis. Visual observations of soil type and condition will be recorded on a field log book. Visual classification will include text descriptions of soils in accordance with Unified Soil Classification System (USCS) guidelines. In addition, field classification will include principal and minor constituents, observed moisture (if any), soil color and soil texture. Soil samples will be designated with a unique identifier as detailed in Section 4.5. Samples will be placed in a cooler, packed with ice, and shipped to a subcontracted laboratory under proper chain-of-custody procedures. After completion of soil coring activities, core holes will be backfilled with topsoil or patched to match the existing surface material.

4.2 WASTE PILES

Sampling of dust and powdered material piles will be conducted using a waste pile sampler (large sampling trier). The waste pile sampler will be inserted into the pile of dust at 0 to 45 degrees from horizontal and rotated in order to cut a core of the material. At regular intervals, equal portions of the sample will be taken from the surface or near surface of the materials and combined in a sample container. Samples will be placed in a cooler, packed with ice, and shipped to a subcontracted laboratory under proper chain-of-custody procedures. During sampling of dry powdered or granular wastes, a dust, mist, or fume respirator, air-line respirator, abrasive-blasting respirator will be worn in addition to other protective gear.

4.3 DAMAGED DRY GOODS

Investigation of granular materials from the damaged dry goods containers throughout the baghouses will be conducted using a grain sampler. The grain sampler consists of two slotted telescoping tubes, usually made of brass or stainless steel. The outer tube has a pointed tip on one end that permits the sampler to penetrate the material being sampled (fiberdrum, can, bags or sacks). Sacks or bags will be sampled in the position found to prevent further rupture of the bags or sacks. Where there is more than one container, the containers will be segregated according to a table of random numbers as discussed in Section 6.4.1.1.

To obtain the sample, the sampler will be inserted into the granular or powdered material from a point near a top edge or corner, through the center and to a point diagonally opposite the point of entry. The inner tube of the sampler is rotated into the open position allowing materials to enter the open slot. The sampler is then closed, withdrawn from the material and the inner tube is removed from the outer tube. The inner tube containing the sampled material is then transferred to a sample jar and labeled. Samples will be placed in a cooler, packed with ice, and shipped to a subcontracted laboratory under proper chain-of-custody procedures.

4.4 LIQUID WASTES

4.4.1 Drums

4.4.1.1 Random Sample Selection

Once the materials to be sampled are segregated by waste type (if known) and numbered consecutively, samples will be chosen randomly using a Table of Random Numbers. One number will be chosen as the starting point from any column in the Table of Random Numbers. By going down the column, then to the next column, random numbers between 1 and 20 will be used to select sample locations (USEPA January 1980). At minimum, one sample from each group of five containers will be collected.

4.4.1.2 Drum Sampling Procedure

Using full protective sampling equipment, the following procedure will be used in sampling drums:

1. Position the drum so that the bung is facing up.
2. Allow the contents of the drum to settle
3. Slowly loosen the bung with a bung wrench, allowing any gas pressure to release.
4. Remove the bung and collect a sample through the bung hole with a Coliwasa, as discussed in 4.4.1.3.

4.4.1.3 Drum Sampling Method

Samples of liquid materials in the drums will be sampled using a plastic or glass (depending upon the liquid waste to be sampled) composite liquid waste sampler (Coliwasa). A Coliwasa consists of a T-handle spivel with a sharply tapered neoprene stopper attached to a 3/8 inch rod, usually made of polychlorinated vinyl chloride (PVC). The Coliwasa will be assembled and tested to ensure that the neoprene rubber stopper provides a tight closure. The sampler will be lowered into the liquid waste at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. When the sampler hits the bottom of the container, the tube will be pushed downward against the stopper to close the sampler and locked in place. The sampler will then be slowly withdrawn from the waste container and the contents discharged into a sample container.

4.4.2 Sumps and Pits

Samples of liquid materials in sumps and pits will be sampled using a pond sampler. A pond sampler consists of an adjustable clamp used to secure a sampling beaker attached to the end of a two or three piece telescoping aluminum pole that serves as the handle. Grab samples of liquids will be collected from the sump, pit or lagoon at different distances and depths by inserting the beaker at the end of the pole into the liquid.

4.5 SAMPLE NUMBERING SYSTEM

A sample numbering system will be used to identify each sample collected for chemical and physical analyses. The numbering system provides accurate sample tracking and facilitates retrieval of sample data. Sample identification numbers will be used on sample labels, chain-of-custody forms and other applicable sampling activity documentation. A list of sample numbers will be maintained in the field logbook. Each sample collected will be assigned a unique sample number. Sample numbers will change when the media (soil, water, etc.) or location changes. Sample numbers will not change because different analyses are requested.

Sample identification numbers consist of three components: a two- or three-character alpha and/or alpha numeric site identification code; a four- to five-character alpha numeric sample type code; and a three digit sample characteristic code. The following is an example of a completely numbered sample, with each component identified:

Example:	JPMS-SB01-001
Where:	JPMS = J-Pitt Melt Shop
	SB01 = soil boring location no. 1
	001 = primary soil sample no. 1

The site identification code (e.g. SB01 in the example above) will remain the same for all samples collected at the Site. The sample type code (SB01) will vary depending on sample type and location. The following are typical SI/RA alpha codes to be used:

DMW = deep monitoring well
SMW = shallow monitoring well
SB = soil boring
SD = sediment
SP = soil probe
SS = surface soil
SR = source material
SW = surface water
TP = test pit
RW = residential water
PZ = piezometer water
WP = waste pile
DDG = damaged dry goods
LD = liquid drum

When completing soil borings and probes, if a water sample is collected from an open boring or probe location, a "W" will be attached to the end of the alpha numeric sample type code (e.g. SB01W). The numerical portion of the sample type code will indicate the sample location (i.e., boring location 01, 02, 03, etc.).

The three-digit sample characteristic code (001) indicates the type of analyses (chemical, QC or physical) and the number of samples collected from each media at a specific sampling location. The first digit will be zero through two for all chemical analyses: zero (0) for primary samples; one (1) for duplicate samples; and two (2) for QC samples. The first digit will be three (3) for physical analyses. The last two digits of the sample characteristic code will indicate the number of each sample collected from each medium at a specific location.

4.6 INVESTIGATION-DERIVED WASTE HANDLING PROCEDURES

Investigation-derived wastes include plastic sheeting, decontamination fluids, disposable sampling equipment and disposable personal protective equipment. Solid and liquid materials will be kept separated. Burns & McDonnell, as needed, will assist M.S. Kaplan in the proper disposal of site investigation-derived wastes. The following subsections discuss procedures for handling these materials and drum labeling procedures.

4.6.1 Solid Materials

Soil and debris removed from probe locations, contaminated disposable sampling equipment that cannot be reasonably decontaminated and contaminated disposable health & safety materials will be segregated and placed in Department of Transportation (DOT) specified 55-gallon drums. Drums will be placed in a secure location as directed by M.S. Kaplan for temporary storage. Disposal methods for these materials will be based on analytical results and will be described in a future work plan.

Disposable sampling equipment and health & safety materials not visibly contaminated will be double-bagged in plastic trash bags and disposed of in a solid waste disposal location (i.e. trash dumpster or container).

4.6.2 Liquid Materials

Decontamination fluids and liquids removed during sampling will be placed directly into Department of Transportation (DOT) specified 55-gallon drums or filtered through activated carbon and then placed in DOT drums. Drums will be placed in a secure location as directed by M.S. Kaplan for temporary storage. Disposal methods for these materials will be based on analytical results and will be described in a future work plan.

4.6.3 Labeling

The following information will be placed on both the side and top of each 55-gallon drum containing investigation-derived wastes:

- Site name.

- Date.
- Waste Type (i.e., water, soil, trash, etc.).
- Waste collection locations (e.g., soil probe or piezometer number).

4.7 ANALYTICAL METHODS AND DETECTION LIMITS

Analytical methods and detection limits for this investigation will conform to USEPA requirements. Detection limits will be at or below USEPA recommended levels. Chemical and physical analysis methods are listed below:

• TCL VOCs	SW846/8260B
• TCLP VOCs	SW846/8260A
• PAHs	SW846/8270 SIM
• TCL SVOCs	SW846/8270
• TCLP SVOCs	SW846/8270A
• TICs	SW846/5035/8260
• Flashpoint	SW1010
• Pesticides	SW846/8081
• PCBs	SW846/8082
• TAL Cyanide (total)	SW846/9012A
• PP metals	Appropriate SW846 Methods
• TCLP metals	Appropriate SW846 Methods
• Soil particle density	ASTM D 854-92
• Moisture content	ASTM D 2216-92
• Soil pH	SW846 9040/9045
• Reactive cyanide	SW846/7.3.3.2
• Reactive sulfide	SW846/7.3.4.2
• Total organic carbon	ASTM D 2974-87
• Grain-size distribution	ASTM D 422

Tables 2 through 5 list analytical detection limits for chemical analyses.

4.8 SURVEYING PROCEDURES

Following completion of field activities, sample locations will be surveyed. The survey will consist of the following:

- Determination of coordinate locations.
- If necessary, determination of coordinate locations for ground surface elevations.

4.9 DECONTAMINATION PROCEDURES

4.9.1 Sampling Equipment

Procedures for equipment decontamination will be implemented to avoid cross-contamination of subsurface strata and various media sampled. The sampling tools will be thoroughly cleaned and decontaminated before initial use.

Initial decontamination will be performed before moving equipment to the Site. In this phase, equipment required to perform sampling will be thoroughly cleaned. Any encrusted soil, mud or organic matter adhering to the equipment will be removed using a high-pressure potable water wash.

Decontamination for sampling equipment includes the following steps:

- Wash with laboratory detergent and potable water.
- Rinse with potable water.
- Rinse with reagent grade ethanol or isopropanol if grease or oil is observed.
- Rinse with distilled water.
- Air dry.
- Wrap in aluminum foil, if necessary, to prevent contamination before use.

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5.0 Risk Assessment

The Site has been initially investigated and characterized as having metal impacts in dust within the facility. Burns & McDonnell will prepare a risk assessment to evaluate whether existing metal concentration levels pose a risk to human health. The most probable receptor is a future industrial worker. The most probable exposure pathway is inadvertent ingestion of dust.

Burns & McDonnell's approach to the risk assessment will be to follow the basic and supplementary guidance provided by USEPA for risk assessment of Superfund sites. This guidance outlines a process with four major components:

- **Data Collection and Evaluation:** The gathering, summarization, and analysis of relevant site data and the identification of chemicals of potential concern. Chemical and other data provided for the site will be reviewed and considered accurate without independent verification or qualification.
- **Toxicity Assessment:** The collection of qualitative and quantitative toxicity information and the determination of appropriate toxicity values. USEPA's Integrated Risk Information System (IRIS) will be the primary source for toxicity data. Other appropriate sources will be used as necessary.
- **Exposure Assessment:** The evaluation of contaminant releases, identification of potentially exposed populations and subpopulations, identification of potentially or actually complete exposure pathways, and estimation of contaminant intakes via exposure routes.
- **Risk Characterization:** The characterization of the potential for adverse health effects to occur, including estimation of cancer risks and non-cancer hazard quotients and evaluation of the uncertainty in the assessment.

Burns & McDonnell will statistically evaluate the analytical results from the site in order to determine the nature of the distribution of values. This statistical evaluation will be used to calculate removal goals such that the post-remediation cumulative risk to humans will not exceed an average of 1E-04 (one in ten thousand), which will be the target risk level for the site.

Note: Removal does not necessarily mean physical removal of soil and groundwater, but rather means removal from the exposure pathway by institutional controls, barriers (like pavement), capping, dig and haul, etc.

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6.0 QUALITY ASSURANCE / QUALITY CONTROL PROJECT PLAN

6.1 PURPOSE AND SCOPE

The purpose of a quality assurance / quality control project plan (QAPP) is to establish the policies, organization, objectives, functional activities, and specific quality assurance activities for the SI/RA. The QAPP describes the specific protocol to be followed for sampling, sample handling and storage, chain-of-custody, and laboratory analysis.

6.2 QUALITY OBJECTIVES AND CRITERIA FOR MEASUREMENT DATA

The overall objective of the QAPP is to establish quality assurance / quality control (QA/QC) criteria for all project activities so that the data generated is scientifically valid, precise, accurate, complete and usable for characterizing chemical distribution and potential site risks, reproducibility, and supportive of the investigation report conclusions. The following sections establish data quality and management objectives for the investigation.

6.2.1 Data Quality and Management Objectives

The following data quality and management objectives have been established for the investigation:

- Data generated during the SI/RA will be utilized to evaluate chemical mobility and extent on the Site.
- Data generated during the SI/RA will allow an evaluation of the accuracy of chemical concentration levels detected at the Site and identify the chemicals of potential concern.
- Data will be reported in units consistent with environmental engineering, geologic, hydrogeologic, and analytical laboratory standards applicable for the data being collected.

All samples will be submitted for laboratory analysis using USEPA analytical methods. QA/QC analytical data will provide the basis for validating Site analytical data obtained during the SI/RA. Site analytical results will be utilized to characterize chemical magnitude and extent at the Site and to evaluate site exposure concerns. Field testing or screening methods (organic vapor measurements and visual sample screening) will be utilized to qualitatively screen samples for chemical residuals; however, these methods will not be utilized to determine chemical concentrations in Site soil or water. Visual sample screening is defined as biased selection of sample locations based on observing stains, stressed vegetation, or other abnormalities. Report conclusions on chemical concentrations present on the Site and potential Site exposure concerns will be based on validated analytical results.

6.2.2 Level of Quality Control

To assess the quality of the data obtained during the field investigation, trip blanks and matrix spike/matrix spike duplicates (MS/MSDs) will be analyzed. Trip blanks, made with laboratory grade water, will be analyzed to assess field sampling activity data quality. Trip blanks are used to ensure that no volatile organic contamination is introduced into the samples as a result of sample handling or shipping activities. The purpose of MS/MSD samples is to determine the effect of sample matrix on compound and analyte recovery. MS/MSDs will be collected from relatively un-impacted areas to minimize the potential for matrix interference from MGP by products. The following table presents frequency of QA/QC samples.

Quality Control Sample Frequency		
QC Sample	Matrix	Frequency
Field Duplicate	Water	1 per 10 or fewer samples
MS/MSD	Soil and Water	1 per 20 or fewer samples
Rinsate Blank	Water	1 for each major piece of equipment used during sampling*
Trip Blank	Water	1 per cooler containing volatile sample(s)

6.2.3 Quality Control Parameters

To assess whether quality assurance objectives for this project have been achieved, the following control parameters will be considered: precision, accuracy, representativeness, comparability, and completeness. Data validation performed by Burns & McDonnell will be in accordance with applicable, professional, technical standards, USEPA requirements, government regulations and guidelines, and specific project goals and requirements.

6.2.4 Precision and Accuracy

Precision is the level of agreement among individual measurements of the same chemical or physical property. During the data validation process, precision is expressed in terms of relative percent difference (RPD). Chemical concentration data obtained from the analysis of field duplicate samples will be compared to evaluate analytical precision. The RPD equals the difference in duplicate sample chemical concentrations multiplied by 100 percent and divided by the mean average duplicate sample chemical concentration. Perfect precision would be indicated by a RPD of zero percent. The RPD is expressed as follows:

$$RPD = \frac{|(D_1 - D_2)|}{(D_1 + D_2)/2} \times 100$$

Where:

RPD = Relative Percent Difference
D_1 = First Duplicate Value
D_2 = Second Duplicate Value

Field duplicate data is utilized to assess data precision. The Burns & McDonnell review typically utilizes guidelines for inorganic compounds to qualify analytical data (RPD less than 20 percent for water samples) and for samples having low chemical concentrations (less than five times the chemical quantitation limit), a sensitivity test is conducted. Analytical data for samples having low chemical concentrations is considered acceptable if the difference in duplicate sample analytical results is less than one times the chemical quantitation limit.

Accuracy measures the bias of a measurement system and may be defined as the degree of agreement between a measurement and its accepted or true value. The accuracy of chemical results is assessed by examining the results of blank samples. Accuracy of spike samples is expressed as the percent recovery (%R). The %R is the difference between the spiked and unspiked sample results for a chemical divided by the amount of chemical added to the sample and multiplied by 100 percent. Perfect accuracy is defined as 100 percent recovery. An elevated %R indicates high sensitivity in detecting a compound; therefore, non-detect results would not be qualified under this condition. A low %R indicates a low sensitivity in detecting a compound which could require qualification of non-detect results.

6.2.5 Representativeness

Representativeness expresses the degree to which a sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. The representativeness of the data will be determined by:

- Qualitative comparison of actual sampling procedures to those presented in this work plan.
- Quantitative comparison of analytical results for field duplicates to determine parameter variation at a sampling point.
- Invalidating non-representative data or identifying data to be classified as questionable through qualitative or quantitative data validation procedures.

Only representative data will be used in subsequent data reduction, validation, and site characterization. Non-representative or questionable data is data, which does not accurately reflect site conditions observed at other sampling points, and is not believed to reflect site impact. A determination of whether data is representative will be completed both qualitatively and through the use of accepted numerical data validation procedures.

6.2.6 Completeness

Completeness defines the percentage of measurements judged to be valid measurements. The laboratory completeness goal is 90 percent. Laboratory completeness will be calculated by dividing the number of samples for which valid laboratory data was obtained by the number of samples submitted for laboratory analysis and multiplying the quotient by 100 percent. At this project stage, no critical samples have been identified for this project. However, critical samples may be identified during the investigation based on field observations or an assessment of the collected data. Similarly, a minimum number of samples needed to characterize the Site have not been developed for this project.

6.2.7 Comparability

Comparability is a qualitative parameter used to express the confidence with which one data set may be compared to another. Comparability is maintained by being aware of previous analytical work and through the use of standard analytical methods and units. Available analytical results from previous studies will be compared with data generated during this investigation. Comparability will be achieved through adherence to procedures specified in this work plan.

6.3 SAMPLE CUSTODY

Each sample or field measurement must be properly documented to identify, track and monitor them from the point of collection through final data reporting. Proper sample documentation and custody procedures help ensure data are accurate and usable. This section discusses the following areas of field investigation documentation: field logbook, photographs, sample numbering system, sample documentation and custody, corrections to documentation, document control and project files.

6.3.1 Field Logbook

Information pertinent to a field survey or sampling event will be recorded in a bound logbook with consecutively numbered pages. Entries in logbooks and on sample documentation forms will be made in waterproof ink. Corrections will consist of single line out deletions that are initialed and dated. Logbook entries will include the following, as applicable:

- Name and title of author, date and time of entry and physical/environmental conditions during field activity.
- Names and addresses of field contacts.
- Names and responsibilities of field crew members.
- Names and titles of site visitors.
- Location, description and log of photographs of sampling points.
- References for maps and photographs of sampling site.
- Information concerning sampling changes, scheduling modifications and change orders.
- Information concerning drilling decisions.
- Details of sampling location (sketches of sampling locations may be appropriate).
- Date and time of sample collection.
- Field observations.
- Field measurements (pH, specific conductance, temperature, depth to water and measuring point).
- Calibration and maintenance information concerning field analytical and monitoring equipment.
- Sample identification number(s).
- Information from reagent container labels (laboratory grade water used for blanks).
- Sample distribution and transportation (e.g., laboratory name and overnight delivery service).

- Sample documentation, such as chain-of-custody form numbers and shipment airbill numbers.
- Decontamination procedures.
- Documentation for investigation-derived wastes, such as contents and approximate waste volume in each drum, number of drums generated and type and predicted level of contamination.
- Summary of daily tasks (including costs) and documentation for cost or scope of work changes required by field conditions.
- Signature of personnel responsible for observations and date.

Sampling situations vary widely; therefore, the exact information that must be entered in a logbook will vary from site to site. However, the logbook should contain enough information to allow anyone to reconstruct the sampling activity without relying on the collector's memory. During the investigation, logbooks will be kept in the possession of a Burns & McDonnell field team member or in a secure place. Following the investigation, logbook(s) will become part of the final project file.

6.3.2 Photographs

When photographing soil or water samples, an informational sign will be prepared and photographed with each sample. This sign will have the Site name, date and a brief description of the sample.

Example: J-Pitt Melt Shop
September 1, 2001
Water sample from MW01

Logbook entries of photographs will have five items of information: field personnel's initials, roll number, frame number, date and a brief description of the photograph.

Example: SD
J-Pitt Melt Shop
Roll No. 1, Frame No. 1
April 1, 2001
Soil sample from 0-2', SB01

6.3.3 Sample Numbering System

A sample numbering system will be used to identify each soil and QC sample collected for chemical and physical analysis. The numbering system is discussed in Section 4.5.

6.3.4 Sample Labels

The following information will be included on each sample label: Site name/client, sample number, name of sampler, sample collection date and time, analysis requested and preservatives added. Information known before field activities (Site name, sample numbers, etc.) can be preprinted on sample labels.

Duplicate sample labels can be prepared when various sample aliquots must be submitted separately for individual analyses.

6.3.5 Chain-of-Custody Forms

A chain-of-custody form will be completed for each sample shipment. After completion of the chain-of-custody form, the original signature (top) copy will be enclosed in a plastic bag and secured to the inside of the cooler lid. A copy of the original custody form will be retained for Burns & McDonnell files.

6.3.6 Custody Seals

Custody seals will be used to ensure the integrity of samples from the time they are relinquished to a delivery service or the laboratory by the sampling team until they are opened in the laboratory. Samples will be shipped in coolers. Each cooler will be sealed with at least two custody seals. Seals must be attached to each cooler so that it is necessary to break them to open the cooler.

6.3.7 Airbill

An airbill will be completed for each different laboratory address to which samples are to be shipped. More than one cooler may be shipped to the same address under one airbill. A copy of the airbill will be given to the Burns & McDonnell representative and will be retained for the project file.

6.3.8 Sample Documentation Procedures

The following itemized list will be used as a general reference for completion of sample documentation:

- Make or obtain a list of samples to be packaged and shipped that day.
- Determine number of coolers required to accommodate the day's shipment based on number of samples to be shipped, number of containers per sample and number of sample containers that will fit in each cooler.
- If samples are shipped by Federal Express, complete an airbill.
- Assign chain-of-custody form to each cooler and determine which sample containers will be shipped in each cooler. (Note: More than one chain-of-custody form may be needed to accommodate number of samples to be shipped in one cooler).
- Determine which samples will be shipped under each chain-of-custody form. Each day that samples are shipped, record chain-of-custody form numbers and air bill numbers (if used) in field logbook. Cross-reference airbill and chain-of-custody numbers.
- Assign custody seals to each cooler and temporarily clip seals to each chain-of-custody form.
- Group all paperwork associated with each cooler with a separate clip.
- Obtain necessary field team members' full signatures or initials on appropriate paperwork.
- Package samples for shipment.

6.3.9 Corrections to Documentation

Original information will be recorded with waterproof ink. If an error is made on a document, corrections will be made by making a single line through the error and entering the correct information. Erroneous information should not be obliterated. Any error discovered on a document should be corrected by the person who identified the error. Corrections must be initialed and dated.

6.3.10 Document Control

The goal of document control is to ensure all documents for a group of samples will be accounted for when the project is complete. Project file audits may be scheduled. The document control audit consists of checking each document submitted for accountability. Written explanations must be made for missing documents.

6.3.11 Project Files

At the completion of the project, individual files will be assembled, organized and stored as a final record for the project.

6.4 CALIBRATION PROCEDURES AND FREQUENCY

This section describes procedures for maintaining the accuracy of instruments and measuring equipment used to perform field measurements and laboratory analyses.

6.4.1 Field Instruments/Equipment

Instruments and equipment used to gather, generate or measure environmental data will be calibrated daily before each use according to manufacturer's specifications. Equipment and field instruments will also be examined daily to verify proper operating conditions. The manufacturer's operating instructions and manuals for each instrument will be read and understood to ensure maintenance requirements are being observed. If the equipment or instruments were used in a previous investigation, field notes will be checked or the equipment manager will be contacted to verify that prior equipment problems are not overlooked and necessary equipment repairs have been performed.

6.4.2 Laboratory Instruments

Laboratory personnel will be responsible for calibration procedures and frequency of calibration for laboratory instruments. Calibration procedures and frequencies will comply with the specifications required by the USEPA.

6.5 SAMPLE SHIPPING AND ANALYTICAL PROCEDURES

In general, samples collected during SI/RA activities will be delivered to the laboratory within 48 hours of collection. Volatile EnCore™ soil samples must be sent to the laboratory within 24 hours. The method used to transport samples will depend on site location and level of ongoing site activities. The preferred method of shipping samples is to have the laboratory pickup samples at the Site. If this is not possible, Burns & McDonnell will hand deliver or ship the samples by overnight carrier (overnight priority). Laboratory pickups and hand deliveries will occur on every other day. Burns & McDonnell will notify and coordinate weekend deliveries with the laboratory no later than 3 p.m. on the Friday preceding the weekend delivery.

Tables 2 through 7 present analytical methods to be used during the SI/RA. The laboratory will perform sample analyses in accordance with the specified methods and USEPA requirements.

6.6 INTERNAL QUALITY CONTROL CHECKS

6.6.1 Field Sample Collection

The Site project manager and engineer will ensure field sampling QC by verifying that sample collection frequencies and procedures outlined in the SI/RA work plan are maintained. Field duplicates and blanks will also be collected and analyzed to check field QC procedures.

6.6.2 Field Measurement

Field measurement QC procedures will be checked by obtaining multiple readings and by calibrating field instruments daily according to manufacturer's specifications. Field personnel will read and understand applicable sections in manufacturer's literature and operations manuals before field instrument usage. Additionally, field personnel will be trained in proper instrument calibration and handling procedures before using field instruments.

6.6.3 Laboratory Analysis

The laboratory will follow QC procedures specified under USEPA requirements.

6.7 DATA REDUCTION, VALIDATION AND REPORTING

6.7.1 Field Measurements and Sample Collection

Field measurement and sample collection activities will be documented in a field logbook. Data used in project reports will be reduced, validated (to the extent possible) and summarized consistent with other sampling data. A data validation memoranda will be produced, detailing reduction and validation procedures.

6.7.2 Laboratory Services

Data reduction includes processes that change either the form of expression, quantity of data values or number of data items. The Burns & McDonnell project team will analyze validated data and perform data reduction for presentation of these data in the monthly progress report(s). Methods used for data reduction will be described in the monthly progress report(s).

Burns & McDonnell personnel will perform data assessment evaluations (determine whether analytical work is of acceptable quality). Analytical work will be performed in accordance with USEPA approved protocols. The data package will correspond to the analytical procedure chosen.

6.8 PERFORMANCE AND SYSTEM AUDITS

Performance and system audits of field and laboratory activities will be conducted to verify that sampling and analysis are performed in accordance with procedures established in this work plan and QAPP. The following sections describe field and laboratory activity audits.

6.8.1 Field Audits

The project manager or project engineer/review team leader will conduct a field activity audit during field sampling activities. The audit will include examination of field sampling and field instrument operating records, verification of sample collection procedures, compliance with sample handling and packaging procedures and maintenance of QA documents (chain-of-custody forms, log books, sampling tracking matrix form, etc.). Following the audit, a brief report will be prepared summarizing the audit results. Deviations from this work plan and QAPP noted during the audit will be remedied immediately.

6.8.2 Laboratory Audits

Burns & McDonnell will periodically audit the laboratory. Audits will include inspection of the laboratory and submittal of performance evaluation or blind samples for analysis.

6.9 PREVENTATIVE MAINTENANCE PROCEDURES

6.9.1 Field Equipment/Instruments

Field equipment to be used during the investigation includes temperature thermometers, pH meter, conductivity meter and health and safety instruments. Manufacturer's specifications for preventative maintenance and calibration will be followed while using field equipment. Field instruments will be checked and calibrated before being taken to the field. Instruments will be checked and calibrated daily before use. Calibration checks will be performed periodically and documented in a field logbook or on calibration log sheets. Critical spare parts and backup equipment for field instruments will be available for delivery within one day to avoid delays in field activities.

6.9.2 Laboratory Instruments

Preventative maintenance of laboratory instruments is the responsibility of the laboratory. Laboratories that follow CLP protocols have internal groups that perform routine scheduled maintenance and repair or coordinate repairs of instruments. Laboratory instruments are maintained in accordance with manufacturer's specifications and requirements of the specific method employed. Maintenance is carried out on a regular, scheduled basis and is documented in laboratory instrument service logbook(s) for each instrument. Emergency repair or scheduled manufacturer's maintenance is provided under repair and maintenance contracts with factory representatives.

6.10 PROCEDURES TO ASSESS DATA PRECISION, ACCURACY AND COMPLETENESS

6.10.1 Field Measurements

The field team leader will assess field measurements daily. The field team leader will review field results for compliance with established QA/QC criteria specified in this work plan and QAPP. Accuracy of field measurements will be assessed by calibrating field instruments daily and, when necessary, by performing field instrument performance checks (testing known solutions). Precision will be assessed by obtaining multiple instrument readings. Completeness will be evaluated by checking field notes to verify that appropriate measurements and frequency of measurements are performed and obtained.

6.10.2 Laboratory Measurements

The laboratory will be required to adhere to the accuracy, precision and completeness requirements established by the USEPA.

6.11 CORRECTIVE ACTIONS

The following subsections describe corrective actions for sample collection/field measurements and laboratory analyses. Nonconformance with established QC procedures outlined in this work plan will be identified and corrected. The project engineer/manager will be notified immediately of any nonconformance issue. The project engineer/manager will promptly report nonconformance to the project manager, who will discuss major problems with M.S. Kaplan representatives.

6.11.1 Sample Collection/Field Measurements

Technical staff and project personnel will be responsible for reporting all nonconformance issues to the project engineer/review team leader. The project engineer/review team leader will be responsible for assessing suspected problem(s), and deciding whether the problem(s) will affect data quality. Corrective actions for field measurements may include the following measures:

- Repeat measurements.
- Check for proper adjustments for ambient conditions, such as temperature.
- Check batteries.
- Check instrument calibrations.
- Recalibrate instrument.
- Replace or repair instrument or measurement device.
- Stop work.
- Contact and consult with project manager.

The project engineer/review team leader is responsible for controlling, tracking and implementing corrective actions. The project engineer/review team leader will inform the project manager of field changes.

6.11.2 Laboratory Analyses

If audits or data review results in detection of unacceptable data, the project manager will be responsible for developing and initiating corrective action, which may include the following measures:

- Re-analyzing soil samples if holding time criteria permit and adequate sample volumes exist.
- Re-sampling and analyzing groundwater.
- Evaluating and amending sampling and analytical procedures.
- Accepting data and acknowledging level of uncertainty.

6.12 QUALITY ASSURANCE REPORTS

Separate quality assurance reports will not be submitted. The monthly progress report(s) will summarize data quality information for data collected during field activities. Memoranda that address field activity results may be submitted to M.S. Kaplan c/o Joseph R. Podlewski, Jr.

* * * * *

7.0 REFERENCES

KRITT *Chicago Zoning Ordinance*, 1999.

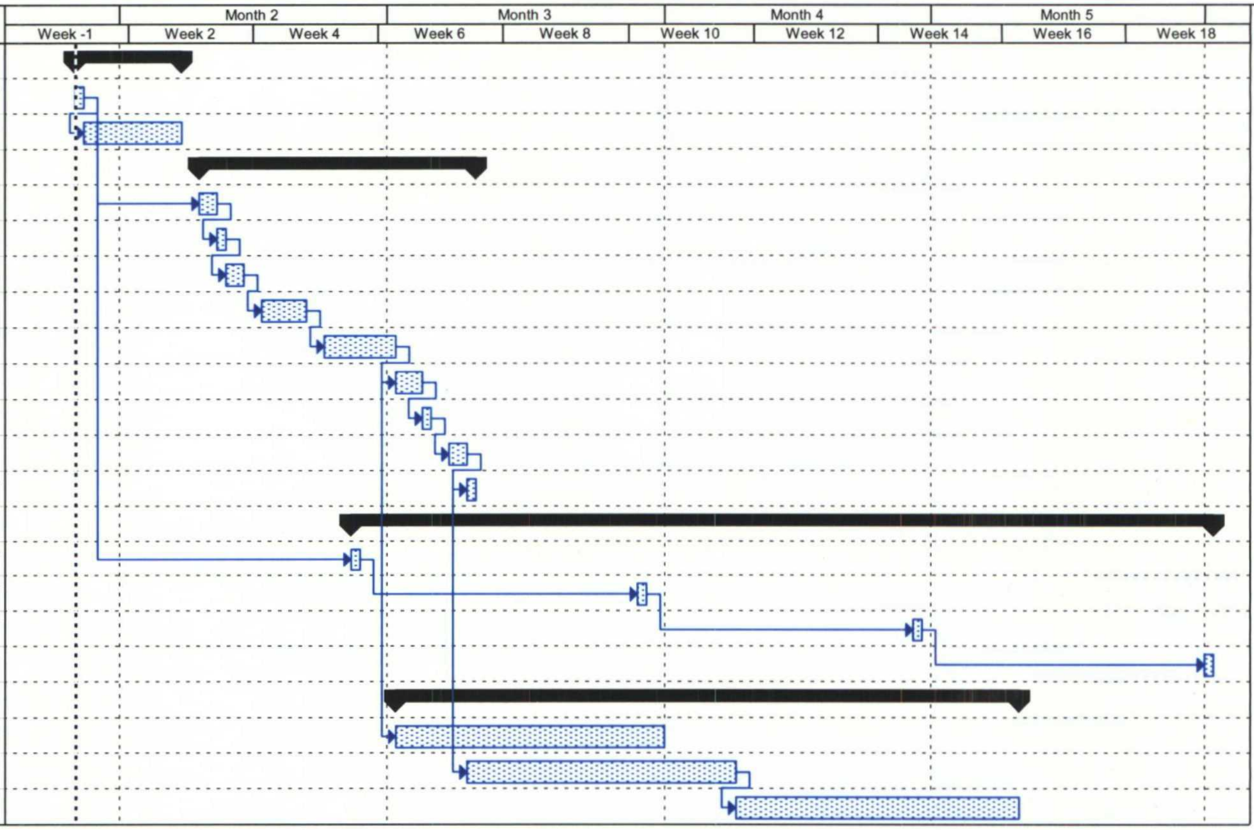
Burns & McDonnell Engineering Company, Inc. *Site Health and Safety Plan for J-Pitt Melt Shop Site*, June, 2001.

United States Environmental Protection Agency (USEPA). *Samplers and Sampling Procedures for Hazardous Waste Streams,* January 1980, EPA-600/2-80-018.

United States Environmental Protection Agency (USEPA). *Pollution Report for J-Pitt Melt Shop Site*, May 2, 2001

Proposed Schedule for
Work Plan Implementation
J. Pitt Melt Shop

ID	Task Name	Duration
1	**Regulatory Approval and Planning**	**10 days**
2	USEPA Approval of Work Plan	1 day
3	Project Planning	9 days
4	**Field Investigation**	**23 days**
5	Install and Maintain Boom	2 days
6	Initial Limited Site Survey	1 day
7	Radioactive Material Removal	2 days
8	Surface and Subsurface Soil Investigation	5 days
9	Drum Liquid Categorization for Removal	6 days
10	Test Pits for Oil-based Wastes	3 days
11	Investigate Pits, Sumps and Damaged Dry Goods	1 day
12	Investigate Baghouse Units/Slag Piles	2 days
13	Sample and Secure Suspect Asbestos	1 day
14	**Reporting**	**69 days**
15	Submit First Monthly Report	1 day
16	Submit Second Monthly Report	1 day
17	Submit Third Monthly Report	1 day
18	Submit Fourth Monthly Report	1 day
19	**Waste Disposal**	**50 days**
20	Dispose of Drum Liquids	22 days
21	Dispose of Bag House Dust	22 days
22	Additional Activities if Necessary	22 days



Project: Project Schedule
Date: Mon 8/27/01

Task		Milestone		Rolled Up Split		External Tasks	
Split		Summary		Rolled Up Milestone		Project Summary	
Progress		Rolled Up Task		Rolled Up Progress			

Table 2
Sampling and Analysis Summary
J-Pitt Melt Shop

Scope of Area/Media	Quantity	Type	Analyses	Sampling Rational
Soil Floor/Surface Soil	12	Chemical	▪ Lead, Cadmium, Chromium	▪ To completely evaluate the ingestion pathway, across the site and evaluate any vertical variation within the soil by sampling within the first 6-inches below ground surface (bgs).
	1	Physical	▪ TOC—ASTM 2974-87 ▪ Soil pH—SW846 9040/9045	▪ The physical sample is intended establish site-specific remedial objectives in accordance with TACO, if needed.
Soil Floor/Subsurface Soil	3	Chemical	▪ Lead, Cadmium, Chromium	▪ To evaluate vertical extent of soil/dust in this area of the site, and evaluate any vertical variation within the soil by sampling within the first 12 feet below ground surface (bgs).
	1	Physical	▪ TOC—ASTM 2974-87 ▪ Soil pH—SW846 9040/9045	▪ The physical sample is intended establish site-specific remedial objectives in accordance with TACO, if needed.
Resinous Material Impact/Surface Soil	3	Chemical	▪ PCBs	▪ Horizontal extent of resinous material.
Resinous Material Impact/Test Pit	5	Chemical	▪ PCBs ▪ total petroleum hydrocarbons (TPH)	▪ To verify release of oil based waste apparently occuring from underneath the facility.
Two Baghouses/Soil and Dust Samples	2	Chemical	▪ full R-Code: ▪ TCLP VOCs—ASTM 8260 ▪ TCLP SVOCs—ASTM 8270 ▪ TCLP metals ▪ Total cyanide ▪ Paint filter ▪ Flashpoint ▪ Reactive Sulfide ▪ Percent Ash ▪ Total Solids ▪ Total phenols ▪ Water reactivity ▪ Soil pH ▪ Extractable Organic Halogens (EOX)	▪ Soil/dust samples for disposal characterization

Table 2
Sampling and Analysis Summary
J-Pitt Melt Shop

Scope of Area/Media	Quantity	Type	Analyses	Sampling Rational
Dust Piles/Soil Samples	3	Chemical	▪ Full R-Code ▪ EOX	▪ Dust samples from the suspect slag or electric arc furnace dust piles located outside the facility
Damaged Dry Goods/Soil Samples	2	Chemical	▪ full R-Code, ▪ EOX, ▪ F-Code Solvent Scan	▪ Soil/dust samples for disposal characterization

Drums/Liquid Samples	Field Screen each Drum	Chemical	▪ Field screen parameters include
			  ▪ pH
			  ▪ Air reactive
			  ▪ Water reactive
			  ▪ Oxidizer
			  ▪ Cyanide
			  ▪ Sulfide
			  ▪ Radioactive
			  ▪ Mercury
			  ▪ Suspected perchloric
			  ▪ Suspected picric
			  ▪ Peroxides
			  ▪ PCBs
			▪ Laboratory analytical waste disposal charactization include
			  ▪ Full R-Code
			  ▪ select samples for:
			  ▪ F-code solvent scan
			  ▪ PCBs
				▪ To assist in segregation into groups up to ten waste types. Once segregated, disposal characterization sampling will be performed and laboratory analyzed. The analysis will be based on specific disposal facility requirements.

Pits and Sumps /Surface Water Samples	6	Chemical	▪ PCBs ▪ Lead, Cadmium, and Chromium	▪ To investigate the extent of impacts related to prior usage of the site.

Table 3 PCBs – Method 8081A/8082 Analytical Detection Limits J-Pitt Melt Shop		
Compound	Method	Detection Limit Soil (mg/kg)
PCB-1016	SW 8082	0.25
PCB-1221		0.25
PCB-1232		0.25
PCB-1242		0.25
PCB-1248		0.25
PCB-1254		0.25
PCB-1260		0.25

Table 4 Metals Analytical Methods and Detection Limits J-Pitt Melt Shop			
Analyte	Method	Detection Limit	
		Water (mg/l)	Soil (mg/kg)
Cadmium	6010B	0.005	0.5
Chromium	6010B	0.040	2.0
Lead	7421	0.005	4.0

Table 5
TCL Volatile Organics – Method 8260
Analytical Detection Limits
J-Pitt Melt Shop

Parameter	CAS Number	Detection Limit	
		Water (mg/l)	Soil (mg/kg)
Acetone	67-64-1	0.010	0.1
Benzene	71-43-2	0.001	0.005
Bromodichloromethane	75-27-4	0.00002	0.01
Bromoform	75-25-2	0.00002	0.005
Bromomethane	74-83-9	0.001	0.01
2-Butanone	78-93-3	0.010	0.01
Carbon Disulfide	75-15-0	0.010	0.01
Carbon Tetrachloride	56-23-5	0.001	0.005
Chlorobenzene	108-90-7	0.001	0.005
Chloroethane	75-00-3	0.002	0.01
Chloroform	67-66-3	0.00002	0.005
Chloromethane	74-87-3	0.010	0.01
Dibromochloromethane	74-97-5	0.001	0.005
1,1-Dichloroethane	75-34-3	0.001	0.005
1,2-Dichloroethane	107-06-2	0.001	0.005
1,1-Dichloroethene	75-35-4	0.001	0.004
cis-1,2-Dichloroethene	156-59-2	0.001	0.004
trans-1,2-Dichloroethene	156-60-5	0.001	0.005
1,2-Dichloropropane	78-87-5	0.001	0.005
cis-1,3-Dichloropropene	10061-01-5	0.001	0.005
trans-1,3-Dichloropropene	10061-02-6	0.001	0.005
Ethylbenzene	100-41-4	0.001	0.005
2-Hexanone	591-78-6	0.010	0.01
Methylene Chloride	75-09-2	0.005	0.005
4-Methyl-2-Pentanone	108-10-2	0.010	0.01
Styrene	100-42-5	0.001	0.005
1,1,2,2-Tetrachloroethane	79-34-5	0.001	0.005
Tetrachloroethene	127-18-4	0.001	0.005
Toluene	108-88-3	0.001	0.005
1,1,1-Trichloroethane	71-55-6	0.001	0.005
1,1,2-Trichloroethane	79-00-5	0.001	0.005
Trichloroethene	79-01-6	0.001	0.005
Vinyl Chloride	75-01-4	0.001	0.01
Xylenes(total)	1330-20-7	0.001	0.005

Table 5 TCL Semivolatile Organics – Method 8270 Analytical Detection Limits J-Pitt Melt Shop			
Compound	CAS Number	Detection Limit	
		Water (mg/l)	Soil (mg/kg)
4-Chloro-3-methylphenol	59-50-7	0.010	0.33
2-Chlorophenol	95-57-8	0.010	0.33
2,4-Dichlorophenol	120-83-2	0.010	0.33
2,4-Dimethylphenol	105-67-9	0.010	0.33
2,4-Dinitrophenol	51-28-5	0.050	1.6
2-Methyl-4,6-dinitrophenol	534-52-1	0.050	1.6
2-Methylphenol(o-cresol)	95-48-7	0.010	0.33
4-Methylphenol(p-cresol)	106-44-5	0.010	0.33
2-Nitrophenol	88-75-5	0.010	0.33
4-Nitrophenol	100-02-7	0.050	1.6
Pentachlorophenol	87-86-5	0.050	1.6
Phenol	108-95-2	0.010	0.33
2,4,5-Trichlorophenol	95-95-4	0.010	0.33
2,4,6-Trichlorophenol	88-06-2	0.010	0.33
Benzylbutylphthalate	85-68-7	0.010	0.33
Bis(2-chloroethoxy)methane	111-91-1	0.010	0.33
Bis(2-chloroethyl)ether	111-44-4	0.010	0.33
2,2-oxybis-(1-Chloropropane)	108-60-1	0.010	0.33
Bis(2-ethylhexyl)phthalate	117-81-7	0.010	0.33
4-Bromophenyl phenyl ether	101-55-3	0.010	0.33
Carbazole	86-74-8	0.010	0.33
4-Chloroaniline	106-47-8	0.020	0.33
2-Chloroaphthalene	91-58-7	0.010	0.33
4-Chlorophenyl phenyl ether	7005-72-3	0.010	0.33
Dibenzofuran	132-64-9	0.010	0.33
Di-n-butyl-phthalate	86-74-2	0.010	0.33
1,2-Dichlorobenzene	95-50-1	0.010	0.33
1,3-Dichlorobenzene	541-73-1	0.010	0.33
1,4-Dichlorobenzene	106-46-7	0.010	0.33
3,3'-Dichlorobenzidine	91-94-1	0.020	0.66
Diethyl phthalate	84-66-2	0.010	0.33
Dimethyl phthalate	131-11-3	0.010	0.33
2,4-Dinitrotoluene	121-14-2	0.010	0.33
2,6-Dinitrotoluene	606-20-2	0.010	0.33
Di-n-octyl-phthalate	117-84-0	0.010	0.33
Hexachlorobenzene	118-74-1	0.010	0.33
Hexachlorobutadiene	87-68-3	0.010	0.33

Table 5 (continued) TCL Semivolatile Organics – Method 8270 Analytical Detection Limits Former Division Street MGP - Marina Site			
Compound	CAS Number	Detection Limit	
		Water (mg/l)	Soil (mg/kg)
Hexachlorocyclopentadiene	77-47-4	0.010	0.33
Hexachloroethane	67-72-1	0.010	0.33
Isophorone	78-59-1	0.010	0.33
2-Methylnaphthalene	91-57-6	0.010	0.33
2-Nitroaniline	88-74-4	0.010	1.6
3-Nitroaniline	99-09-2	0.010	1.6
4-Nitroaniline	100-01-6	0.010	1.6
Nitrobenzene	98-95-3	0.010	0.33
N-Nitrosodimethylamine	86-30-6	0.010	0.33
N-Nitroso-di-n-propylamine	621-64-7	0.010	0.33
N-Nitrosodiphenylamine	86-30-6	0.010	0.33
1,2,4-Trichlorobenzene	120-82-1	0.010	0.33

Table 6 TCL Semivolatile Organics – Method 8270 Analytical Detection Limits J. Pitt Melt Shop			
Compound	CAS Number	Detection Limit	
		Water (mg/l)	Soil (mg/kg)
4-Chloro-3-methylphenol	59-50-7	0.010	0.33
2-Chlorophenol	95-57-8	0.010	0.33
2,4-Dichlorophenol	120-83-2	0.010	0.33
2,4-Dimethylphenol	105-67-9	0.010	0.33
2,4-Dinitrophenol	51-28-5	0.050	1.6
2-Methyl-4,6-dinitrophenol	534-52-1	0.050	1.6
2-Methylphenol(o-cresol)	95-48-7	0.010	0.33
4-Methylphenol(p-cresol)	106-44-5	0.010	0.33
2-Nitrophenol	88-75-5	0.010	0.33
4-Nitrophenol	100-02-7	0.050	1.6
Pentachlorophenol	87-86-5	0.050	1.6
Phenol	108-95-2	0.010	0.33
2,4,5-Trichlorophenol	95-95-4	0.010	0.33
2,4,6-Trichlorophenol	88-06-2	0.010	0.33
Benzylbutylphthalate	85-68-7	0.010	0.33
Bis(2-chloroethoxy)methane	111-91-1	0.010	0.33
Bis(2-chloroethyl)ether	111-44-4	0.010	0.33
2,2-oxybis-(1-Chloropropane)	108-60-1	0.010	0.33
Bis(2-ethylhexyl)phthalate	117-81-7	0.010	0.33
4-Bromophenyl phenyl ether	101-55-3	0.010	0.33
Carbazole	86-74-8	0.010	0.33
4-Chloroaniline	106-47-8	0.020	0.33
2-Chloroaphthalene	91-58-7	0.010	0.33
4-Chlorophenyl phenyl ether	7005-72-3	0.010	0.33
Dibenzofuran	132-64-9	0.010	0.33
Di-n-butyl-phthalate	86-74-2	0.010	0.33
1,2-Dichlorobenzene	95-50-1	0.010	0.33
1,3-Dichlorobenzene	541-73-1	0.010	0.33
1,4-Dichlorobenzene	106-46-7	0.010	0.33
3,3'-Dichlorobenzidine	91-94-1	0.020	0.66
Diethyl phthalate	84-66-2	0.010	0.33
Dimethyl phthalate	131-11-3	0.010	0.33
2,4-Dinitrotoluene	121-14-2	0.010	0.33
2,6-Dinitrotoluene	606-20-2	0.010	0.33
Di-n-octyl-phthalate	117-84-0	0.010	0.33
Hexachlorobenzene	118-74-1	0.010	0.33
Hexachlorobutadiene	87-68-3	0.010	0.33

Table 6 (continued) TCL Semivolatile Organics – Method 8270 Analytical Detection Limits J. Pitt Melt Shop			
Compound	CAS Number	Detection Limit	
		Water (mg/l)	Soil (mg/kg)
Hexachlorocyclopentadiene	77-47-4	0.010	0.33
Hexachloroethane	67-72-1	0.010	0.33
Isophorone	78-59-1	0.010	0.33
2-Methylnaphthalene	91-57-6	0.010	0.33
2-Nitroaniline	88-74-4	0.010	1.6
3-Nitroaniline	99-09-2	0.010	1.6
4-Nitroaniline	100-01-6	0.010	1.6
Nitrobenzene	98-95-3	0.010	0.33
N-Nitrosodimethylamine	86-30-6	0.010	0.33
N-Nitroso-di-n-propylamine	621-64-7	0.010	0.33
N-Nitrosodiphenylamine	86-30-6	0.010	0.33
1,2,4-Trichlorobenzene	120-82-1	0.010	0.33

Figures

Project Team Organizational Chart

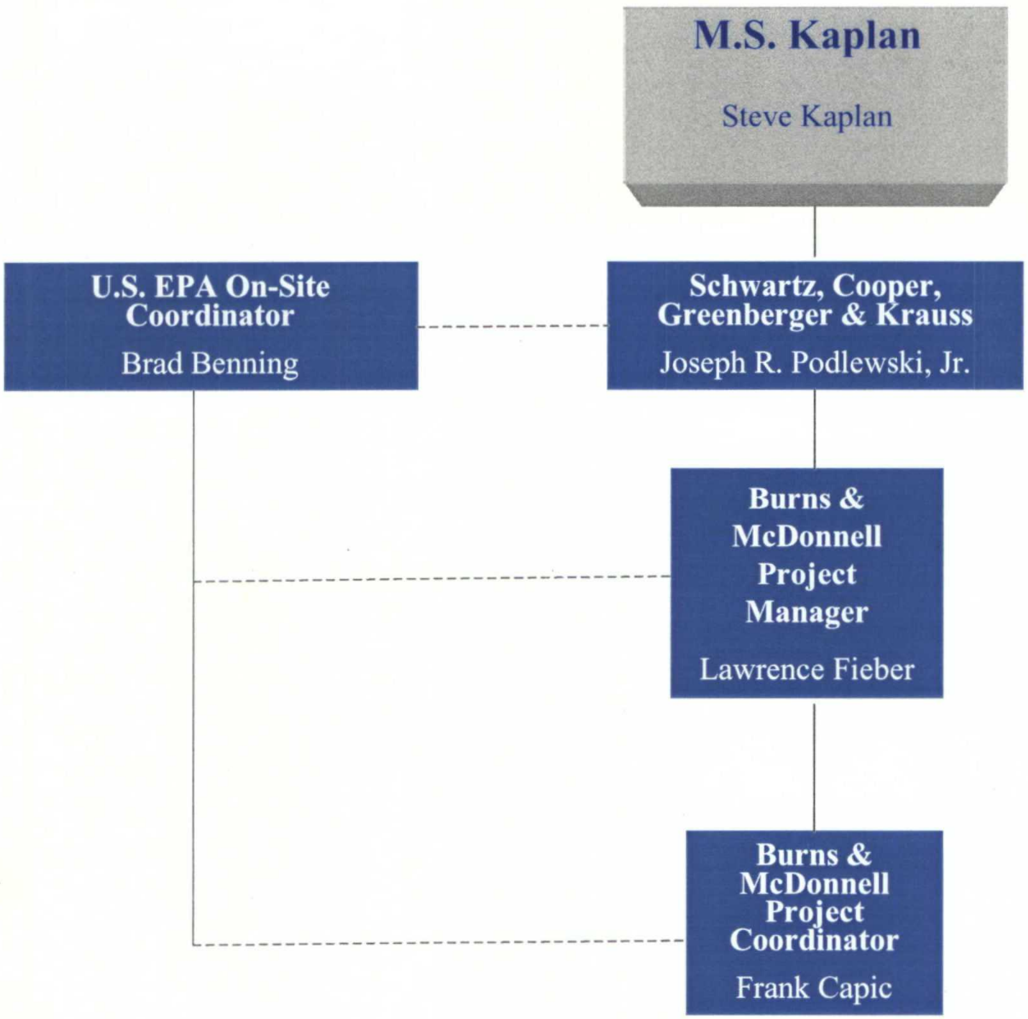
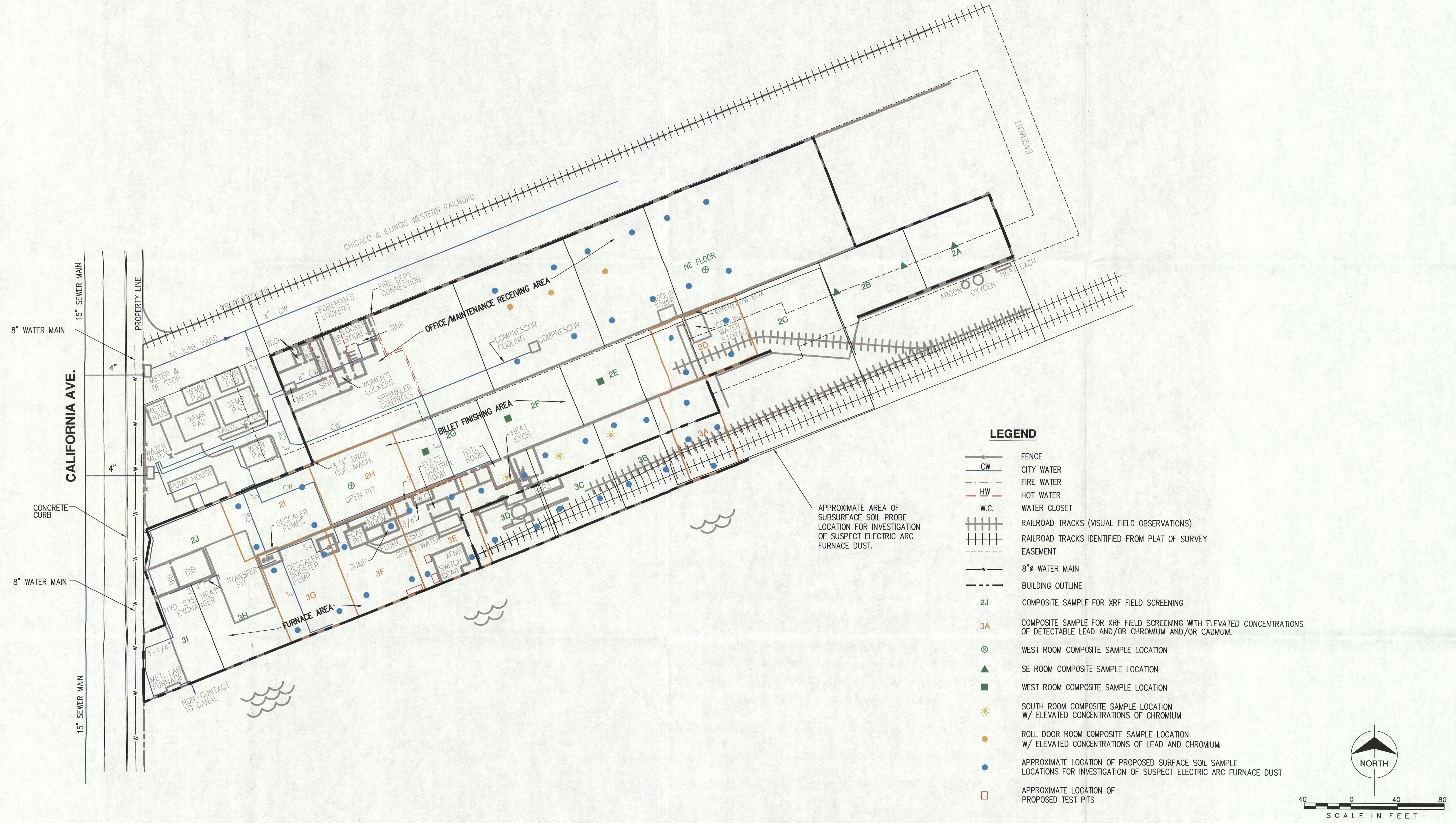


Figure 1

Site Investigation/Removal Action

J-Pitt Melt Shop



NOTE:
PLAN ADAPTED FROM AUGUST 16, 1993 CITY WATER PIPING PLAN MY MECA ENGINEERING CORP.

no.	date	by	revision

Burns & McDonnell
SINCE 1898

date | detailed
designed | checked

J. PITT MELT SHOP
3151 S. CALIFORNIA AVE.
CHICAGO, ILLINOIS

Figure 4
PROPOSED SOIL SAMPLE LOCATION MAP

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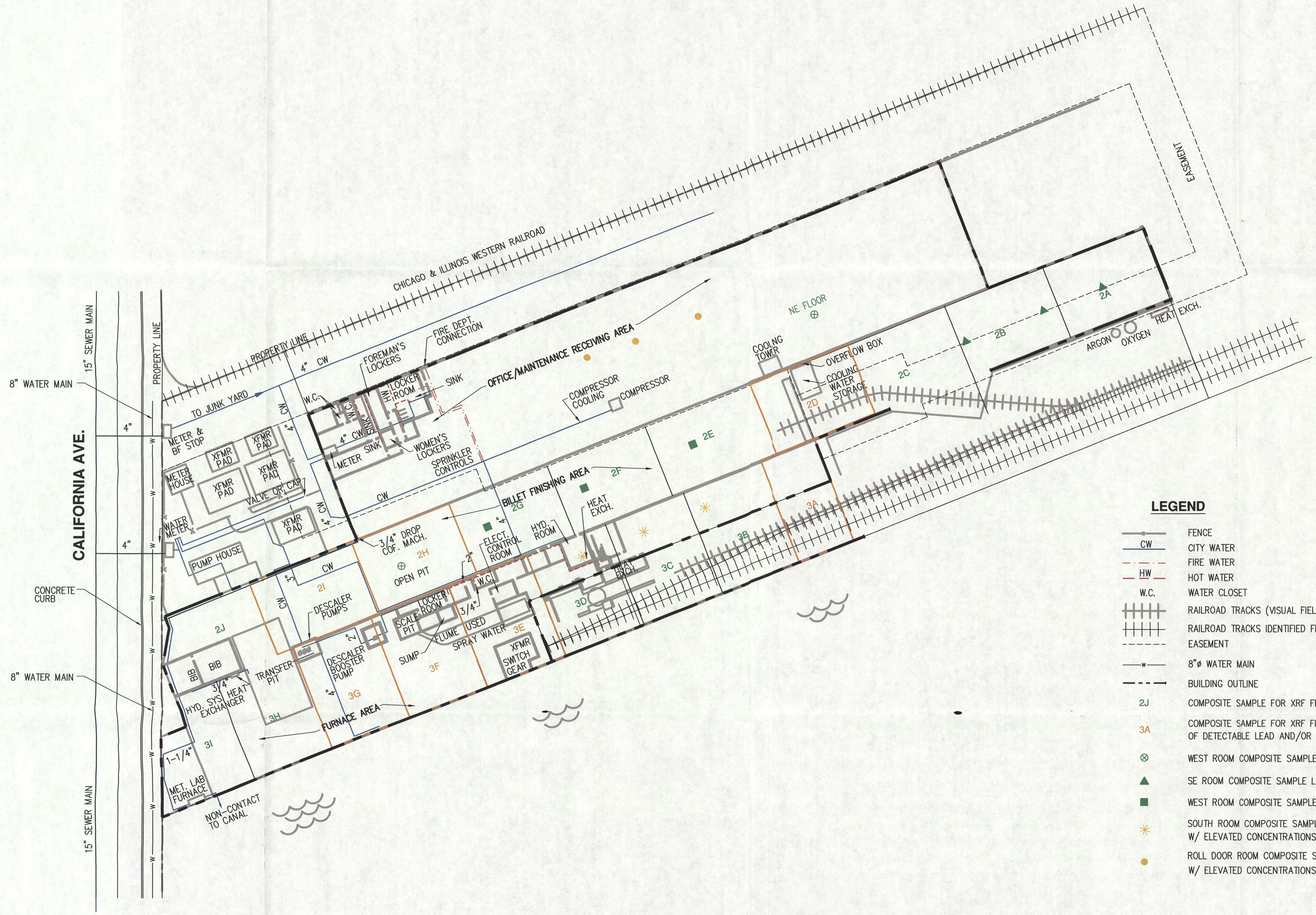

LEGEND

- FENCE
- CW — CITY WATER
- FIRE WATER
- HW — HOT WATER
- W.C. — WATER CLOSET
- RAILROAD TRACKS (VISUAL FIELD OBSERVATIONS)
- RAILROAD TRACKS IDENTIFIED FROM PLAT OF SURVEY
- EASEMENT
- 8"ø WATER MAIN
- BUILDING OUTLINE
- 2J — COMPOSITE SAMPLE FOR XRF FIELD SCREENING
- 3A — COMPOSITE SAMPLE FOR XRF FIELD SCREENING WITH ELEVATED CONCENTRATIONS OF DETECTABLE LEAD AND/OR CHROMIUM AND/OR CADMIUM.
- WEST ROOM COMPOSITE SAMPLE LOCATION
- SE ROOM COMPOSITE SAMPLE LOCATION
- WEST ROOM COMPOSITE SAMPLE LOCATION
- SOUTH ROOM COMPOSITE SAMPLE LOCATION W/ ELEVATED CONCENTRATIONS OF CHROMIUM
- ROLL DOOR ROOM COMPOSITE SAMPLE LOCATION W/ ELEVATED CONCENTRATIONS OF LEAD AND CHROMIUM

NORTH

40 0 40 80
SCALE IN FEET

NOTE:
PLAN ADAPTED FROM AUGUST 16, 1993 CITY WATER PIPING PLAN MY MECA ENGINEERING CORP.

no.	date	by	revision

Burns & McDonnell SINCE 1898

date | detailed
designed | checked

J. PITT MELT SHOP
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CHICAGO, ILLINOIS

Figure 3
PREVIOUS INVESTIGATIONS SAMPLE LOCATION MAP

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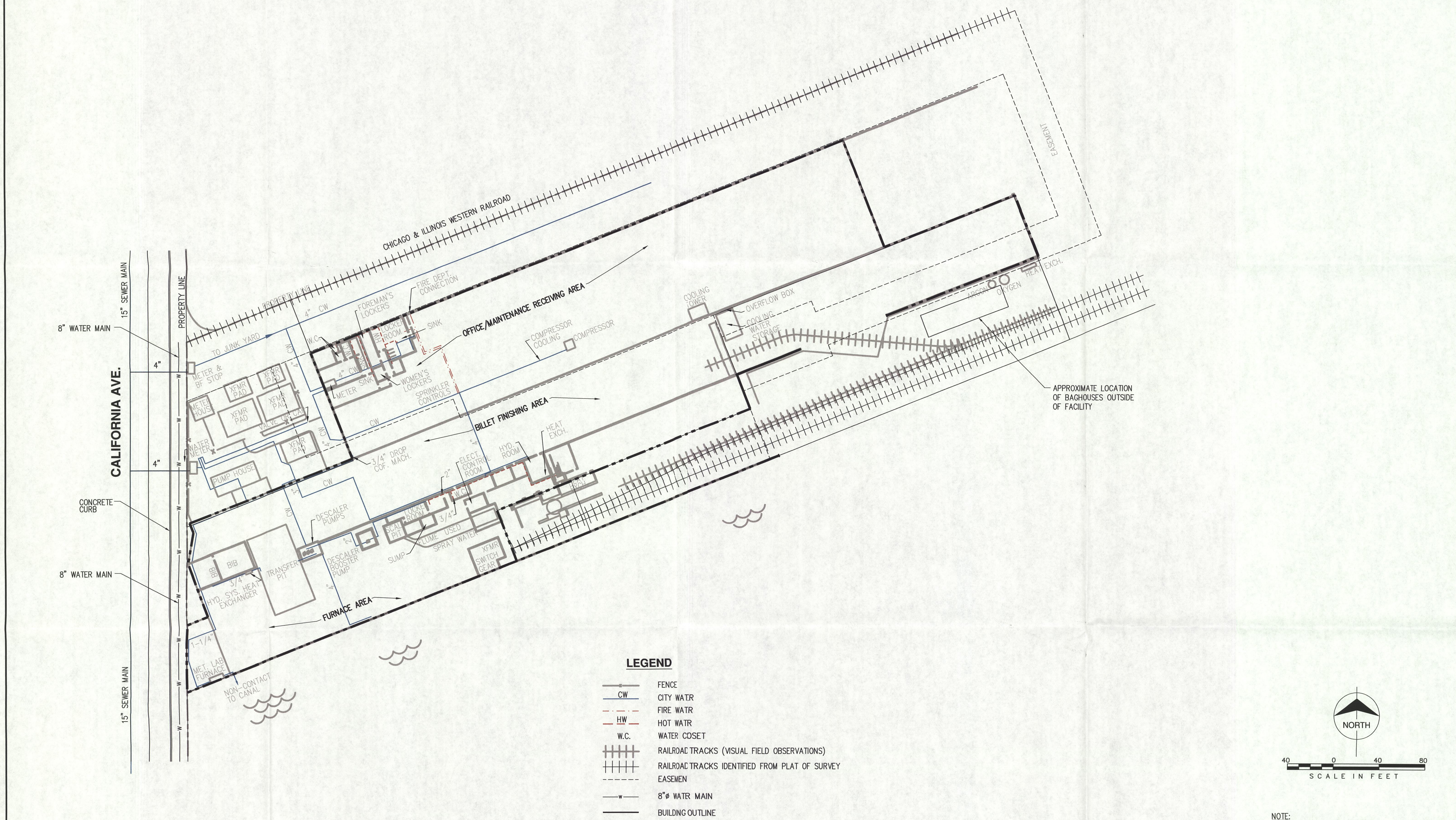

NOTE:
PLAN ADAPTED FROM AUGUST 16, 1993 CITY WATER PIPING PLAN MY MECA ENGINEERING CORP.

no.	date	by	revision

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Figure 2
SITE MAP

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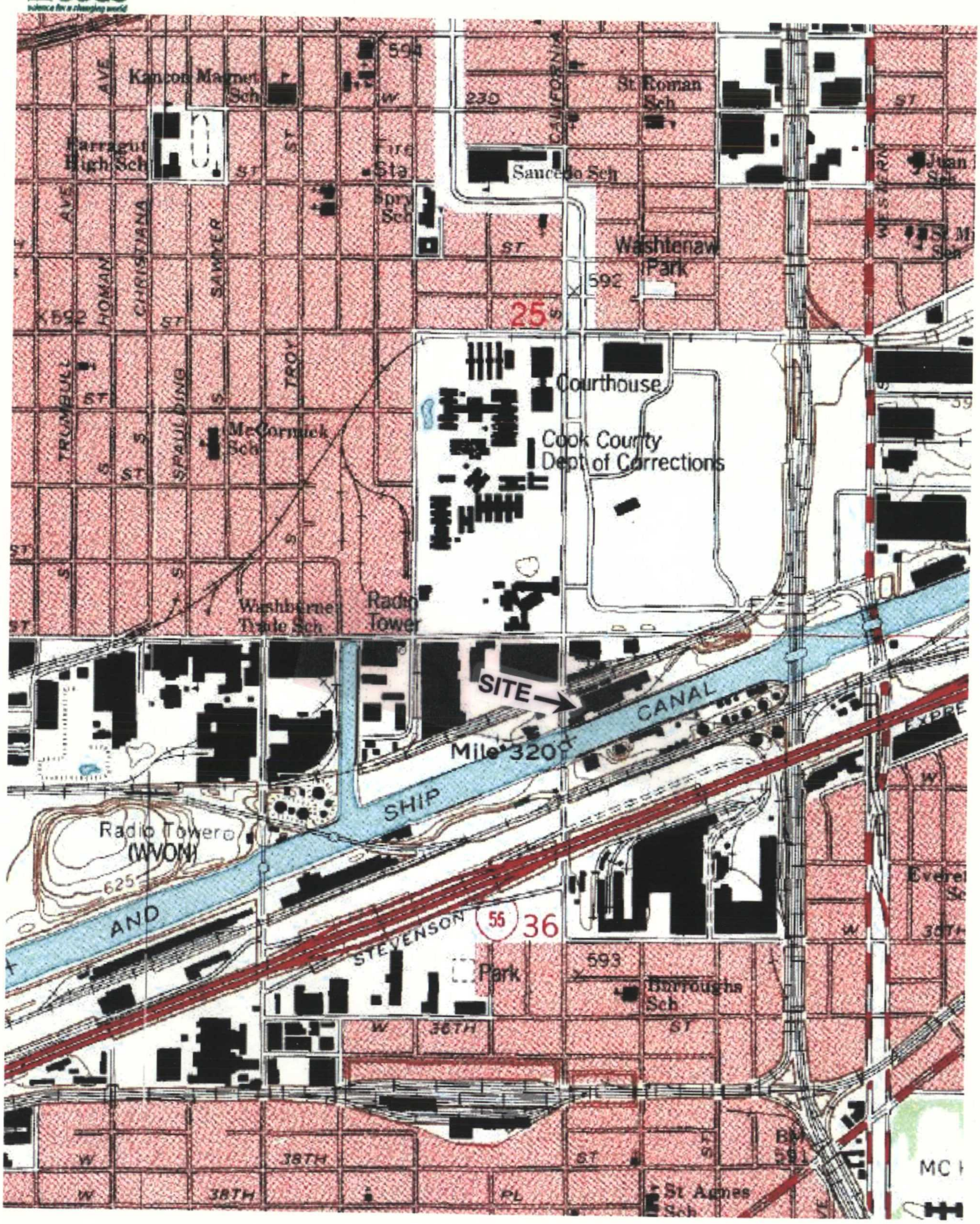
Microsoft TerraServer Display Image USGS Topo Map

Chicago, Illinois, United States 01 Jul 1992



Lora Battaglia

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June 11, 2001

Mr. Steve Kaplan
M.S. Kaplan Company
2500 Euclid Avenue
Chicago Heights, Illinois 60411

Mr. Lawrence Fieber
Burns & McDonnell
2601 West 22nd Street
Oak Brook, Illinois 60523-1229

RECEIVED
JUN 13 2001
Burns & McDonnell
Oak Brook, IL

Re: J. Pitt Melt Shop

Dear Steve and Lawrence:

Enclosed for your information is a copy of the United States Environmental Protection Agency's administrative record to support its CERCLA removal action in the above-referenced case. I received this from the USEPA by mail on June 11, 2001.

Very truly yours,

ROSENTHAL AND SCHANFIELD

Joe Podlewski

Joseph R. Podlewski, Jr.

JRP/lod
Enclosure

ATTACHMENT III

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
J-PITT STEEL MELT SHOP SITE
CHICAGO, COOK COUNTY, ILLINOIS

ORIGINAL
MAY 8, 2001

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	04/09/01	Gulcyzynski, A. & R. Muzzalupo, IDNS	Benning, B., U.S. EPA	Memorandum re: Radiation Survey for the J-Pitt Steel Melt Shop Site	15
2	04/16/01	Tetra Tech EM, Inc.	Benning, B., U.S. EPA	Analytical and Quality Control Reports for the J-Pitt Steel Metal Shop Site	1
3	04/17/01	Jensen, L. U.S. EPA	Benning, B., U.S. EPA	Memorandum re: Radiation Survey for the J-Pitt Steel Melt Shop Site	11
4	04/20/01	Ganz, J. IIT Research Institute	Benning, B., U.S. EPA	XRF Analyses for for J-Pitt Steel Melt Shop Site	2
5	05/02/01	Benning, B. U.S. EPA	Distribution List	POLREP #1 (Initial) for the J-Pitt Steel Melt Shop Site	3
6	00/00/00	Benning, B., U.S. EPA	Muno, W. U.S. EPA	Action Memorandum: Request for a Time-Critical Removal Action at the J-Pitt Steel Melt Shop Site **(PENDING)**	5

U.S. ENVIRONMENTAL PROTECTION AGENCY

POLLUTION REPORT

I. HEADING

Date: May 2, 2001
Subject: J-Pitt Steel Melt Shop Site, Chicago, Cook County, Illinois
From: Brad Benning, U.S. EPA On-Scene Coordinator, Region 5

To:

K. Mould, U.S. EPA, OSWER, Washington, D.C.	FAX 703/603-9133
R. Karl, U.S. EPA, Chief, ERB, Chicago, IL	FAX 312/353-9176
B. Bolen, U.S. EPA, Chief, RS2, Chicago, IL	FAX 312/353-9176
L. Nachowicz, U.S. EPA, Chief, RS3, Chicago, IL	FAX 312/353-9176
W. Messenger, U.S. EPA, Chief, ESS, Chicago, IL	FAX 312/353-9176
J. Maritote, U.S. EPA, ERB, Chicago, IL	FAX 312/353-9176
G. Narsete, U.S. EPA, ERB, Chicago, IL	FAX 312/353-9176
S. Kaehler, CDOE, Chicago, IL	FAX 312/744-6451

POLREP No: Initial and #1

II. BACKGROUND

Site No: B5Y2
Response Authority: CERCLA
CERCLIS No: ILN000508169
NPL Status: No
State Notification: ILL. EPA
Status of Action Memorandum: **Pending**
Start Date: April 5, 2001
Completion Date: N/A

III. SITE INFORMATION

A. Incident Category

CERCLA Emergency Action

B. Site Description

The J-Pitt Steel Melt Shop Site is a former steel making operation located in Chicago, Cook County, Illinois. The site, located in an industrial area at 3151 South California Avenue, has been abandoned since 1997. The site is bordered to the north by the Chicago Illinois Western Railroad tracks, to the east by a scrap metal operation, to the south by the Chicago Sanitary District Canal (the Canal), and to the west by California Avenue. The site consists of a large industrial building in good condition, divided into three sections. Section one, the northern most section of the building is approximately 630 feet by 98 feet, section two is 760 feet by 60 feet, and section three, adjacent to the Canal, is 530 feet by 72 feet. Scattered throughout the facility are large pieces of steel making equipment, including a furnace, baghouses, a cooling tower, and numerous large transformers. Near the furnace in section three, a series of elevated platforms and walkways remain intact. Large quantities of various industrial materials used in the steel making process, including silica, insulating Tundish spray, and magnesium oxide remain in the building.

C. Description of Threat

Numerous drums, fuel storage containers, paint cans, poly tanks, and miscellaneous small containers are scattered throughout the site. The contents of these drums and containers include oils, grease, acids, paints, cleaning fluids and other unknown materials. Several pits containing unknown liquids are located in sections two and three. In addition, large piles of slag, dust, and flyash are present the building, mainly in section three. Asbestos and radioactive material is also present on-site. Site access is not completely restricted and previous trespassers on-site have removed the majority of the electrical equipment and copper wiring.

IV. RESPONSE INFORMATION

A. Response Activities to Date (April 5, 2001 to April 19, 2001)

U.S. EPA was notified of the site by the U.S. Coast Guard (USCG), Chicago Marine Safety Office on Thursday, April 5, 2001. The USCG reported an oil sheen on the Canal near the site. On-scene coordinator (OSC) Brad Benning responded to the call. A site inspection lead to the discovery of 258 artillery rounds in a slag pile at the back of the facility. Because it was unknown whether the artillery was live, several agencies were notified. The Chicago Police Department (CPD), Chicago Department of the Environment (CDOE), and the U.S. Army all responded to the site. After several days of negotiations, the artillery rounds were removed by the U.S. Army on Tuesday, April 10, 2001.

On April 6, 2001, in order to examine the additional threats on-site, OSC Benning mobilized an ERRS contractor, Ferguson Harbor, Inc., to the site to assist with site work. In response to the sheen on the Canal, several pieces of absorbent boom were placed in the Canal to contain the sheen. Further investigation of the building uncovered other immediate threats including drums and other containers containing oils, grease, baghouse dust, antifreeze, acids, hydraulic fluid, and other unknown liquids, leaking transformers, open pits with unknown contents, large slag and dust piles, and asbestos materials. U.S. EPA and Illinois Department of Nuclear Safety (IDNS) performed radiation survey throughout the site building. Two large steel kettles in section two were identified as containing radioactive materials, specifically Cesium-137. Another source of Cesium-137 was discovered in a room between sections two and three.

On Monday, April 9, 2001, a four person crew from Ferguson Harbor, along with equipment including a Bobcat, mobilized to the site. The Ferguson Harbor crew began setting up a staging area in section one for the drums, tanks, transformers and other containers located throughout the facility. A sea curtain was placed in the Canal, in addition to the existing absorbent boom, to further contain the oil sheen.

OSC Benning also mobilized the Superfund Technical Assessment Team (START) to site on Monday, April 9, 2001. START performed air monitoring throughout the site and collected samples to help further identify the threats to human health and the environment on-site. START collected six samples from locations throughout the building. Oil was discovered on the floor of a transformer room in section three. START collected a sample of this oil and used a Chlor-n-oil, PCB field test kit to determine if PCBs were present in the oil. The result from the test kit was less than 50 parts per million (ppm), therefore a sample from this area was not sent for analysis. The samples were sent to a laboratory for analysis, four of the samples were analyzed for TCLP Lead and RCRA metals, and the remaining two samples were analyzed for PCBs.

Analytical results indicated high levels of PCBs in one sample. Arsenic, barium, chromium, cadmium, lead, mercury and silver were all detected in the four samples analyzed for RCRA metals. These metals were detected at varying levels, low levels of arsenic, barium, cadmium, mercury, and silver in all four samples, but slightly higher levels chromium and lead in two samples. Levels detected were: 54,000 ppm PCB-1254 in the NE Floor sample, 528 ppm chromium and 854 ppm lead in the Roll Door Room sample, and 1,310 ppm chromium and 342 ppm lead in the South Room sample.

Over the next two weeks, Ferguson Harbor continued to locate drums, tanks, and various containers from throughout the building and stage them in the front of section one. Drums and containers were located throughout the facility, including upper levels of the platforms around the furnace and on top of office rooms located throughout the facility. The contents of the drums located in higher levels were pumped to empty drums on the floor in order to safely remove the drums and their contents from these restricted access areas. A small lab was discovered in section three. The lab contained small amounts of various acids including nitric acid, muratic acid and hydrofluoric acid. These acids, along with the other chemicals stored in the lab area, were overpacked in five-gallon buckets and staged with the materials in section one.

In order to determine the nature of the contamination in the dust and soil throughout the facility, START established a grid system in sections two and three. Section two was divided into grids of approximately 100 feet in length and section three was divided lengthwise into grids of approximately 50 feet. On April 11 and April 12, 2001, START collected a composite sample of the material located in each grid. A total of ten samples were collected from section two and nine samples were collected from section three. On April 16, 2001, a U.S. EPA contractor brought an X-ray fluorometer (XRF) instrument to site in order to perform an on-site analysis for lead and cadmium on the composite grid samples previously collected by START. START collected two additional samples for XRF analysis, on sample from the large slag pile outside the building in section three, and one sample of baghouse dust from a drum in section one. The XRF analytical results indicated lead in concentrations over 500 ppm in only three samples, and cadmium levels over 500 ppm in two samples. The highest lead levels, approximately 1200 ppm, were detected in the sample collected from the drum of baghouse dust in section one.

In an effort to further prevent any oil spills or leaks in the building, Ferguson Harbor drained the large oil reservoirs of several pieces of equipment remaining on site. The oil was pumped into empty 55-gallon drums. As of April 18, 2001, all visible drums, containers, and tanks located throughout the site were staged in section one. Approximately 176 55-gallon drums, six 175-gallon poly tanks, one 300-gallon steel fuel tank, and 20 pallets of various small containers were staged in this area. In addition, eight gas cylinders and approximately twenty old batteries were found in the building.

During the course of the emergency site evaluation activities, the PRP agreed to take over the site clean-up operations. Once all the drums, containers, tanks, and other materials were staged in a central area, OSC Benning halted U.S. EPA site activities in order to negotiate a consent order with the PRP for the remaining site work. The final day on-site for U.S EPA, Ferguson Harbor and START was April 18, 2001.

B. Next Steps

1. Negotiate a consent order with the PRP for removal of the immediate threats on-site
2. Conduct PRP oversight to ensure the proper activities are occurring on-site.

C. Key Issues

N/A

V. ESTIMATED COSTS (through April 19, 2001)

	Used	Ceiling	Percent Remaining
ERRS	$ 30,000	$ 35.000	15%
START	$ 6,500	$ 10.000	65 %

* The above accounting of expenditures is an estimate based on amounts known by the OSC at the time of the preparation of this report. The cost accounting data shown in this report does not necessarily represent the exact monetary figures which the U.S. Government may include in any claim for cost recovery.

VI. DISPOSITION OF WASTES

DISPOSITION OF WASTES
31st AND CALIFORNIA
CHICAGO, ILLINOIS

Wastestream / Backfill	Medium	Quantity	Units	Treatment	Disposal Facility
Artillery Rounds	N/A	258	Each	None	

Tetra Tech EM Inc.

200 E. Randolph Drive, Suite 4700 ◆ Chicago, IL 60601 ◆ (312) ~~856~~-8700 ◆ FAX (312) 938-0118

MEMORANDUM

Date: 02 May 01

To: Stephanie Wenning, TN & Associates for Superfund Technical Assessment and Response Team (START) for Region 5

From: Lisa Graczyk, Chemist, Tetra Tech START for Region 5

Subject: Data Validation for
31st and California
Chicago, IL
Analytical Technical Direction Document (TDD) No. S05-0104-012
Project TDD No. S05-0104-009

Laboratory: Test America Incorporated (Test America), Bartlett, Illinois
Work Order No. 0103016
Total Resource Conservation and Recovery Act (RCRA) Metals and Toxicity Characteristic Leaching Procedure (TCLP) Lead Analysis of Four Soil Samples; and Polychlorinated biphenyl (PCB) Analysis of Two Oil Samples

1.0 INTRODUCTION

The Tetra Tech START for Region 5 validated total RCRA metals, and TCLP lead analytical data for four soil samples and PCB analytical data for two oil samples collected on 09 Apr 01 during a site evaluation of the 31st and California site in Chicago, Illinois. The samples were analyzed under the above-referenced work order by Test America using U.S. Environmental Protection Agency (EPA) SW-846 Methods 7471A for mercury analysis; 7060 for arsenic analysis; 7740 for selenium analysis; 7760 for silver analysis; 6010B for barium, cadmium, chromium, and lead analyses; 1311 for TCLP extraction; and 8082 for PCB analysis.

The data were validated in general accordance with the EPA's "Contract Laboratory Program National Functional Guidelines for Organic Data Review" dated Oct 99 and "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (NFG) dated Feb 94. Organic data validation consisted of a review of the following quality control (QC) parameters: holding times, gas chromatograph (GC) instrument performance check, initial and continuing calibrations, blank results, surrogate results, matrix spike and matrix spike duplicate sample (MS/MSD) results, laboratory control sample (LCS) results, and compound identification. Inorganic data validation consisted of a review of the following QC parameters: holding times, initial and continuing calibrations, blank results, interference check sample (ICS) results, laboratory control sample (LCS) results, and matrix spike and matrix spike duplicate (MS/MSD) results.

Section 2.0 discusses the results of the organic data validation, Section 3.0 discusses the results of the inorganic data validation, and Section 4.0 presents an overall assessment of the data. The attachment contains Test America's summary of sample analytical results.

2.0 ORGANIC DATA VALIDATION RESULTS

The results of START's data validation are summarized below in terms of the QC parameters reviewed.

2.1 HOLDING TIMES

All samples were analyzed within the established holding time limit of 14 days to extraction and 40 days to analysis from extraction for PCB analyses.

2.2 GC INSTRUMENT PERFORMANCE CHECK

The chromatographic peak resolutions were adequate in the PCB analysis.

2.3 INITIAL AND CONTINUING CALIBRATIONS

The relative standard deviation (RSD) for the initial calibration was less than the QC limit of 20 percent for the PCB analyses. The difference between the calculated concentration and true concentration for the continuing calibration standard was less than the QC limit of 15 percent for the PCB analyses.

2.4 BLANK RESULTS

A blank was run with the analytical batch. No target analytes were detected in the blank at concentrations exceeding the instrument detection limit.

2.5 SURROGATE RESULTS

The surrogates for the PCB analysis were within the QC limits or diluted out and could not be evaluated against QC limits. No qualifications are necessary based on the surrogates being diluted out.

2.6 MS/MSD RESULTS

Test America did not analyze a MS and MSD with the samples. However, no qualifications are warranted based on this. Peak resolutions of the chromatograms were adequate in the samples.

2.7 LCS RESULTS

An LCS was analyzed with the samples, and results were within the QC limits of 80 to 120 percent recovery.

2.8 COMPOUND IDENTIFICATION

Compound identification in the samples was adequate. The chromatographic peak pattern of the sample with detected PCBs matched the chromatographic peak pattern of the PCB standard.

3.0 INORGANIC DATA VALIDATION RESULTS

The results of START's data validation are summarized below in terms of the QC parameters reviewed.

3.1 HOLDING TIMES

All samples were analyzed within the 28-day holding time limit for mercury, and the 6-month holding time limit for all other metals.

3.2 INITIAL AND CONTINUING CALIBRATIONS

The recoveries during the initial and continuing calibrations were within the QC limits of 80 to 120 percent for mercury and 90 to 110 percent for all other metals.

3.3 BLANK RESULTS

Initial calibration blanks, continuing calibration blanks, and preparation blanks were run with each analytical batch. Target analytes were not detected in the blanks above the laboratory reporting limits.

3.4 ICS RESULTS

The ICSs were analyzed with the samples. The ICS results were within the QC limit of 80 to 120 percent recovery.

3.5 LCS RESULTS

A LCS was analyzed with each analytical batch. All LCS results were within QC limits of 80 to 120 percent recovery.

3.6 MS/MSD RESULTS

Test America did not analyze a MS and MSD with the samples. However, no qualifications are warranted based on this.

4.0 OVERALL ASSESSMENT OF DATA

The overall quality of the data generated by Test America is acceptable for use.

ATTACHMENT

TEST AMERICA SUMMARY OF SAMPLE ANALYTICAL RESULTS

(10 Sheets)

TestAmerica
INCORPORATED

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2

Job Number:

IEPA Cert. No.:
WDNR Cert. No.: 99

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: Proj. #S05-0104-012; 31st & California

Sample Number	Sample Description	Date Taken	Date Received
623252	Roll Door Room	04/09/2001	04/09/2001
623253	SE Room	04/09/2001	04/09/2001
623254	West Room	04/09/2001	04/09/2001
623255	South Room	04/09/2001	04/09/2001
623256	Open Pit	04/09/2001	04/09/2001
623257	NE Floor	04/09/2001	04/09/2001

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Robert E. White

Project Manager

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Sample No. : 623252

Job No.: 01.03016

Sample Description: Roll Door Room
Proj. #S05-0104-012; 31st & California

Date Taken: 04/09/2001
Time Taken: 13:30

Date Received: 04/09/2001
Time Received: 18:50

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Time Analyzed	Analyst Initials	Analytical Method
Solids, Total	73.8		%	0.1	04/12/2001		jht	SM 2540
TCLP Metals Extraction	Leached				04/10/2001		kkp	SW 1311
Arsenic, GFAA	12		mg/kg dw	2.0	04/13/2001		jtt	SW 7060
Barium, ICP	244		mg/kg dw	1.4	04/13/2001		aks	SW 6010B
Cadmium, ICP	15		mg/kg dw	0.68	04/13/2001		aks	SW 6010B
Chromium, ICP	528		mg/kg dw	2.7	04/13/2001		aks	SW 6010B
Lead, ICP	854		mg/kg dw	5.4	04/13/2001		aks	SW 6010B
Mercury, CVAA	0.92		mg/kg dw	0.054	04/12/2001		efw2	SW 7471A
Selenium, GFAA	<2.0		mg/kg dw	2.0	04/13/2001		jtt	SW 7740
Silver, AA	4.6		mg/kg dw	2.7	04/11/2001		kbh	SW 7760
TCLP-Lead, ICP	<0.200		mg/L	0.200	04/13/2001		jtt	SW 6010B

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TestAmerica
INCORPORATED

ANALYTICAL REPORT

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Sample No. : 623253

Job No.: 01.03016

Sample Description: SE Room
Proj. #S05-0104-012; 31st & California

Date Taken: 04/09/2001
Time Taken: 13:50

Date Received: 04/09/2001
Time Received: 18:50

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Time Analyzed	Analyst Initials	Analytical Method
Solids, Total	96.9		%	0.1	04/12/2001		jht	SM 2540
TCLP Metals Extraction	Leached				04/10/2001		kkp	SW 1311
Arsenic, GFAA	21		mg/kg dw	1.5	04/13/2001		jtt	SW 7060
Barium, ICP	114		mg/kg dw	1.0	04/13/2001		aks	SW 6010B
Cadmium, ICP	20		mg/kg dw	0.52	04/13/2001		aks	SW 6010B
Chromium, ICP	341		mg/kg dw	2.1	04/13/2001		aks	SW 6010B
Lead, ICP	279		mg/kg dw	4.1	04/13/2001		aks	SW 6010B
Mercury, CVAA	0.31		mg/kg dw	0.041	04/12/2001		efw2	SW 7471A
Selenium, GFAA	<1.5		mg/kg dw	1.5	04/13/2001		jtt	SW 7740
Silver, AA	2.9		mg/kg dw	2.1	04/11/2001		kbh	SW 7760
TCLP-Lead, ICP	<0.200		mg/L	0.200	04/13/2001		jtt	SW 6010B

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INCORPORATED

ANALYTICAL REPORT

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Sample No. : 623254

Job No.: 01.03016

Sample Description: West Room
Proj. #S05-0104-012; 31st & California

Date Taken: 04/09/2001
Time Taken: 14:20

Date Received: 04/09/2001
Time Received: 18:50

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Time Analyzed	Analyst Initials	Analytical Method
Solids, Total	99.3		%	0.1	04/12/2001		jht	SM 2540
TCLP Metals Extraction	Leached				04/10/2001		kkp	SW 1311
Arsenic, GFAA	3.9		mg/kg dw	1.5	04/13/2001		jtt	SW 7060
Barium, ICP	19		mg/kg dw	1.0	04/13/2001		aks	SW 6010B
Cadmium, ICP	13		mg/kg dw	0.50	04/13/2001		aks	SW 6010B
Chromium, ICP	352		mg/kg dw	2.0	04/13/2001		aks	SW 6010B
Lead, ICP	57		mg/kg dw	4.0	04/13/2001		aks	SW 6010B
Mercury, CVAA	0.041		mg/kg dw	0.040	04/12/2001		efw2	SW 7471A
Selenium, GFAA	<1.5		mg/kg dw	1.5	04/13/2001		jtt	SW 7740
Silver, AA	<2.0		mg/kg dw	2.0	04/11/2001		kbh	SW 7760
TCLP-Lead, ICP	<0.200		mg/L	0.200	04/13/2001		jtt	SW 6010B

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TestAmerica
INCORPORATED

ANALYTICAL REPORT

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Sample No. : 623255

Job No.: 01.03016

Sample Description: South Room
Proj. #S05-0104-012; 31st & California

Date Taken: 04/09/2001
Time Taken: 14:45

Date Received: 04/09/2001
Time Received: 18:50

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Time Analyzed	Analyst Initials	Analytical Method
Solids, Total	99.4		%	0.1	04/12/2001		jht	SM 2540
TCLP Metals Extraction	Leached				04/10/2001		kkp	SW 1311
Arsenic, GFAA	9.7		mg/kg dw	1.5	04/13/2001		jtt	SW 7060
Barium, ICP	191		mg/kg dw	1.0	04/13/2001		aks	SW 6010B
Cadmium, ICP	16		mg/kg dw	0.50	04/13/2001		aks	SW 6010B
Chromium, ICP	1,310		mg/kg dw	2.0	04/13/2001		aks	SW 6010B
Lead, ICP	342		mg/kg dw	4.0	04/13/2001		aks	SW 6010B
Mercury, CVAA	0.11		mg/kg dw	0.040	04/12/2001		efw2	SW 7471A
Selenium, GFAA	<1.5		mg/kg dw	1.5	04/13/2001		jtt	SW 7740
Silver, AA	4.0		mg/kg dw	2.0	04/11/2001		kbh	SW 7760
TCLP-Lead, ICP	<0.200		mg/L	0.200	04/13/2001		jtt	SW 6010B

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TestAmerica
INCORPORATED

ANALYTICAL REPORT

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Sample No. : 623256

Job No.: 01.03016

Sample Description: Open Pit
Proj. #S05-0104-012; 31st & California

Date Taken: 04/09/2001
Time Taken: 14:55

Date Received: 04/09/2001
Time Received: 18:50

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Time Analyzed	Analyst Initials	Analytical Method
Prep PCBs Oil	extracted				04/12/2001		jjh	SW 3580A
PCBs 8082 Oil								
PCB-1016	<2		mg/kg	2	04/12/2001		out	SW 8082
PCB-1221	<2		mg/kg	2	04/12/2001		out	SW 8082
PCB-1232	<2		mg/kg	2	04/12/2001		out	SW 8082
PCB-1242	<2		mg/kg	2	04/12/2001		out	SW 8082
PCB-1248	<2		mg/kg	2	04/12/2001		out	SW 8082
PCB-1254	<2		mg/kg	2	04/12/2001		out	SW 8082
PCB-1260	<2		mg/kg	2	04/12/2001		out	SW 8082
Surr: Decachlorobiphenyl (DCB)	60.0		%	45-134	04/12/2001		out	SW 8082
Surr: Tetrachloroxylene (TCX)	45.0		%	45-132	04/12/2001		out	SW 8082

850 W. Bartlett Rd. / Bartlett. IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Sample No. : 623257

Job No.: 01.03016

Sample Description: NE Floor
Proj. #S05-0104-012; 31st & California

Date Taken: 04/09/2001
Time Taken: 15:10

Date Received: 04/09/2001
Time Received: 18:50

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Time Analyzed	Analyst Initials	Analytical Method
Prep PCBs Oil	extracted				04/12/2001		jjh	SW 3580A
PCBs 8082 Oil								
PCB-1016	<40,000		mg/kg	40,000	04/12/2001		out	SW 8082
PCB-1221	<40,000		mg/kg	40,000	04/12/2001		out	SW 8082
PCB-1232	<40,000		mg/kg	40,000	04/12/2001		out	SW 8082
PCB-1242	<40,000		mg/kg	40,000	04/12/2001		out	SW 8082
PCB-1248	<40,000		mg/kg	40,000	04/12/2001		out	SW 8082
PCB-1254	54,000		mg/kg	40,000	04/12/2001		out	SW 8082
PCB-1260	<40,000		mg/kg	40,000	04/12/2001		out	SW 8082
Surr: Decachlorobiphenyl (DCB)	DILUTED	D	ug/L	45-134	04/12/2001		out	SW 8082
Surr: Tetrachloroxylene (TCX)	DILUTED	D	ug/L	45-132	04/12/2001		out	SW 8082

D : Diluted out

850 W. Bartlett Rd. / Bartlett. IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

Lisa Graczyk/Dave Franc
TETRA TECH EM, INC.
200 East Randolph Dr.
Ste. 4700
Chicago, IL 60601

04/16/2001

Job Number: 01.03016

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Project Description: Proj. #S05-0104-012; 31st & California

CASE NARRATIVE

No analytical exceptions were noted outside of routine method protocols.

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KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
N/S	:	No coliform bacteria were present and the opinion is satisfactory.
P/U	:	Coliform bacteria were present and the opinion is unsatisfactory.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

ASTM	"American Society for Testing Materials"
EPA	"Methods for Chemical Analysis of Water and Wastes", USEPA, EPA 600/4-79-020, Revised March 1983.
EPA	"Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", EPA 600/4-82-057, July 1982.
SDWA	"Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water", USEPA, September 1986.
SDWA	"Methods for the Determination of Metals in Environmental Samples", Supplement I USEPA, EPA-600/R-94/111, May 1994.
SM	"Standard Methods for the Examination of Water and Wastewater", APHA-AWWA-WPCF, 18th Edition.
SW	"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW-846.

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ATTACHMENT: CHAIN OF CUSTODY

Following are the chain of custody documents associated with the samples pertaining to this report.

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IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 1050; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

To: Steve Peterson
Brad Benning

cc: J. Morris
J. Thakkar
M. Kaminsky

From: J. Ganz

Date: April 20, 2001

TDF: 5-03-005

Re: XRF analyses for the JPIT Melt Shop

One ESAT analyst drove to the JPIT Melt Shop in Chicago on April 16, 2001 for the purpose of performing XRF analysis on soil and dust samples associated with this site. The TDF requires the samples to be analyzed for lead and chromium; however, the on-site coordinator (OSC) requested analysis for lead and cadmium. There was no interest in chromium.

A workstation was set up just inside the entrance to a building which was part of the area under investigation. A zone surrounding this entrance was designated as a "clean area"; the sampling crew used this zone for decontaminating and changing clothing. The instrument used was the Spectrace 9000 XRF. The XRF was set up and allowed to warm up and adapt to the ambient temperature (approximately 35 degrees F) for one hour.

The samples had already been dried and ground and stored in plastic bags when the analyst arrived at the site. Sample aliquots were placed into the XRF sample cups in preparation for analysis.

After the instrument had been allowed to stand for an hour, the analyst analyzed a series of soil standards supplied by Outokumpu Electronics containing lead and cadmium in order to estimate the reliability of the concentration readings obtained from the instrument. From this data it was observed that cadmium values were biased high by up to 35% while the lead values were biased low by up to 20% for readings greater than 400 ug/l. For lead readings less than 400 the bias was 35%.

Readings for all standards and samples were taken using three radiation sources: cadmium 109, iron 55, and americium 241. The exposure time was 200 seconds for each source, or 600 seconds total.

The table below lists the cadmium and lead readings for the samples supplied to the analyst.

Sample	Lead (ppm)	Cadmium (ppm)
3A	434	138
3I	162	125
3G	44	639
3H	81	187
3B	46	162
3C	94	133
3D	40	38
3E	155	238
3F	124	282
Slagpile	ND	178
Drum	1254	116
2B	83	347
2A	330	162
2C	247	173
2D	505	189
2E	ND	568
2F	ND	271
2G	111	260
2H	ND	440
2I	ND	600

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 5
Superfund Division
77 West Jackson Boulevard
Chicago, Illinois 60604

DATE : April 17, 2001

SUBJECT: Radiation Survey, JPITT Melt Shop, Chicago, Illinois

FROM: Larry Jensen, CHP
Senior Health Physicist
Emergency Response Section #3

TO: Brad Benning
On-Scene Coordinator
Emergency Response Section #3

On April 12 and 13, 2001, Gerald Gels, U.S. Environmental Protection Agency (USEPA) Emergency Response Team (Signal Corporation) and I surveyed the JPITT Melt Shop at 3151 S. California Avenue, Chicago, Illinois 60608 for radioactive materials.

We walked the entire ground floor and, also the upper level where what we believe the "caldron" that was used to melt scrap metal was. A two by two sodium iodide detector and a FIDLER sodium iodide detector were used for surveillance and a SAM portable multi-channel analyzer was used for radionuclide detection. Thirteen major sources were found.

Three of these were large cylinders, about 3 feet in diameter and about 3 feet high. The SAM detector established that they each contained a cesium-137 source. Exposure rates are shown on the attached sketches. These levels were low enough that response personnel can work in the vicinity without acquiring a significant dose. However, judging by the thickness of the lid, I believe that there is a strong source inside. Records showed that the previous owner purchased several 1.25 curie cesium-137 sources. If these are inside, removal of the lid could expose a source that could cause very significant dose or even death. Thus, in no case should these devices be dismantled. Smears taken on all three devices showed no removable material.

The ten remaining sources were "needles" about 5 inches long and about ½ inch in diameter at the base. The "needle" portion of this was about 4 inches long and about 1/16th to 1/8th inch in diameter. There was a section about 1 inch long and about 1/8th inch in diameter at the tip that appears to be the source. These were also identified as cesium-137 with the SAM detector. [Later you called to say that you had been told these are devices imbedded in the refractor brick that melt away when the brick deteriorates and needs replacing. Monitoring outside the container periodically with a survey meter would show a decrease in count rate when the brick needs replacement. Based upon my experience, this is plausible.] The remaining ten sources were measured (as a group) to be about 4.5 milliroentgen per hour on contact with the SAM. This dose rate would give the equivalent of a chest X-ray in about 2 hours. Because these sources are potent and small in size, I strongly recommend that they be isolated [In a discussion with you on April 16, you suggested putting them in the opening of one of the three large devices discussed in the previous paragraph. This is a good idea so long as a strong cover is placed over the opening. There should be a radiation label there as well. Also, in transferring the sources, care should be used in worker protection by the using of tongs, short transfer times and shielding if possible.].

Records that you discovered showed that the previous owner, Charter Electric Melt, had purchased several 1.25 curie cesium-137 sources from the company Ronan. These are strong sources and have the potential to be lethal if mishandled. Therefore, great care should be exercised in this response action with regard to any radioactive sources so that workers are not put at risk.

Your records also showed that Charter Electric Melt had a Nuclear Regulatory Commission (NRC) license (NRC 12-20231-01) and an Illinois Department of Nuclear Safety (IDNS) license (IL-01040-01). These 13 sources, and possibly others, could have been covered by these licenses. Roland Likus of the Nuclear Regulatory Commission's Region III Lisle, Illinois, office said that, because Illinois is now an NRC Agreement State, license questions will be handled by the IDNS. I tried to reach Mr. Joseph Klinger, Chief of IDNS's Division of Radioactive Materials, and Mr. Gib Vinson in their licensing program to discuss these issues but was not able to get phone calls returned.

On Friday, April 13, Andrew Gulczynski and Joanne Kark of the Illinois Department of Nuclear Safety's Glen Ellyn office answered my April 12 call for assistance. Mr. Gulczynski said that the license had been terminated and Ronan had verified that all sources had been returned. Thus, the origin of the 13 sources USEPA found is in question but they could reasonably be presumed to be connected to the former licensees. Because of the potential for serious radiation injury if there are still large cesium-137 sources onsite, I would recommend that IDNS be asked to conduct a full building inspection as soon as possible. Mr. Gulczynski said such a survey would be conducted, but not until all the hazardous chemicals were removed.

In such a survey, I would recommend that the bottom of the "caldron" be looked at. There is some belief that the 3 large devices were extrusion devices where hot melt was converted to billets. The logo of JPITT, painted on a wall, and, also, the Charter Electric Melt sign in one office, are identical and show what could be interpreted as metal being extruded out the bottom of a caldron. Thus, there could be more sources on the site. Mr. Gels and I were not able to inspect the base of the caldron.

In addition to the 13 devices discussed above, there are numerous other radioactive materials in this building. These consist of bags of materials, "doughnut" shaped objects, disk shaped objects, formed materials, "dirt" and bricks. These were measured to be uranium and thorium materials, presumably unlicensed, uncontrolled Naturally Occurring Radioactive Materials (NORM). Our measurements show that they do not present a worker exposure problem. They are probably commercial materials that are not identified and treated as radioactive in the general environment. IDNS would be the determiner on official control issues. Mr Gulczynski and Ms Kark took 500 milliliters for spectral analysis of MarPatch-Z, a bagged material found on the upper level near the "caldron" that showed the highest count rate.

The licenses held by Charter Electric Melt and JPITT Melt Shop should be reviewed to see what sources were onsite. It should be determined if Charter transferred their license to JPITT and if JPITT officially terminated their license when they went bankrupt in 1997. Review of any closeout surveys by IDNS and/or NRC could help establish if there are remaining sources onsite. I would strongly recommend this for protection of our workers if nothing else, especially if IDNS does not plan to reenter the building until the chemical hazards are removed.

MEMORANDUM

TO: Incident File

FROM: Andrew S. Gulczynski, Health Physicist
Robin G. Muzzalupo, Health Physicist
Division of Radioactive Materials

DATE: April 9, 2001

RE: Object Characterization at 3151 S. California, Chicago

On April 6, 2001, the Department received a call from Mr. Brad Benning, On-Scene Coördinator, USEPA, (312) 353-7613. Information provided indicated that the EPA, while doing a survey of an old abandoned warehouse, had come across what was described as a 3 ft diameter metal kettle with a bolted lid and a steel column through the middle. According to USEPA, a reading of 100 uR/hr was obtained as they approached the object. USEPA had cordoned off an area around the unknown object and had requested assistance from IDNS. Upon notification from Mr. Tom Seif, Head of Inspection and Enforcement, Mr. Andrew S. Gulczynski and Ms. Robin G. Muzzalupo departed from Glen Ellyn to the site located at 3151 S. California Street in Chicago.

Surveys were performed by the inspectors using an Eberline Model PRM-6 ratemeter, serial number 1470, last calibrated on May 18, 2000, with an Eberline Model HP-260 probe and a Bicron Micro Rem Low Energy survey instrument, serial number B970N, last calibrated on May 22, 2000. Background readings were 40 - 60 CPM and 5 - 8 Rem/hour, respectively. The highest exposure rate obtained at the front rectangular opening was 80 Rem/hour. Surface wipes were collected at this opening and the side where a slightly elevated reading was detected. Field evaluation of these wipes showed no detectable removable contamination. These wipe samples were forwarded to Springfield for laboratory analysis.

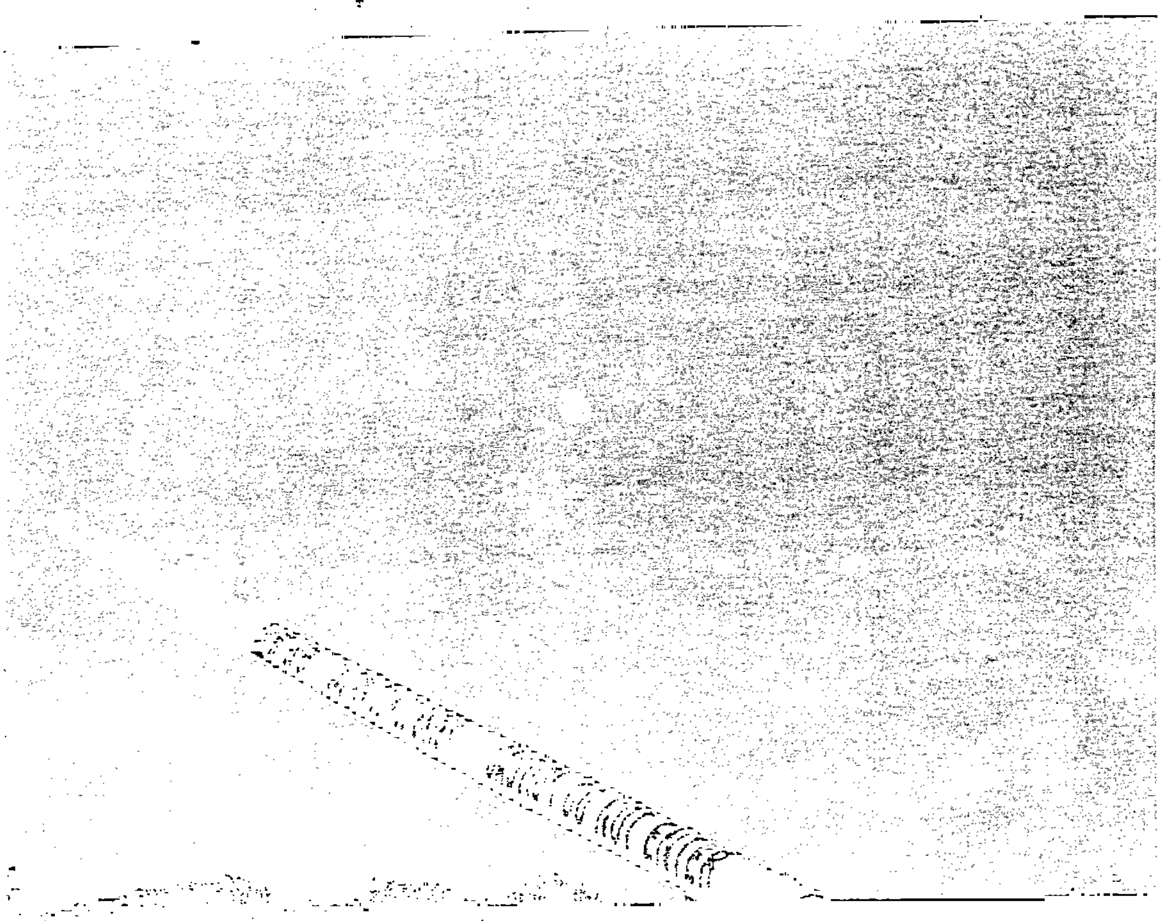
A gamma spectrum was obtained using the Microspec-2 portable multichannel analyzer, serial number 94006. The radionuclide was identified as ^{137}Cs. Spectral data are included with this report.

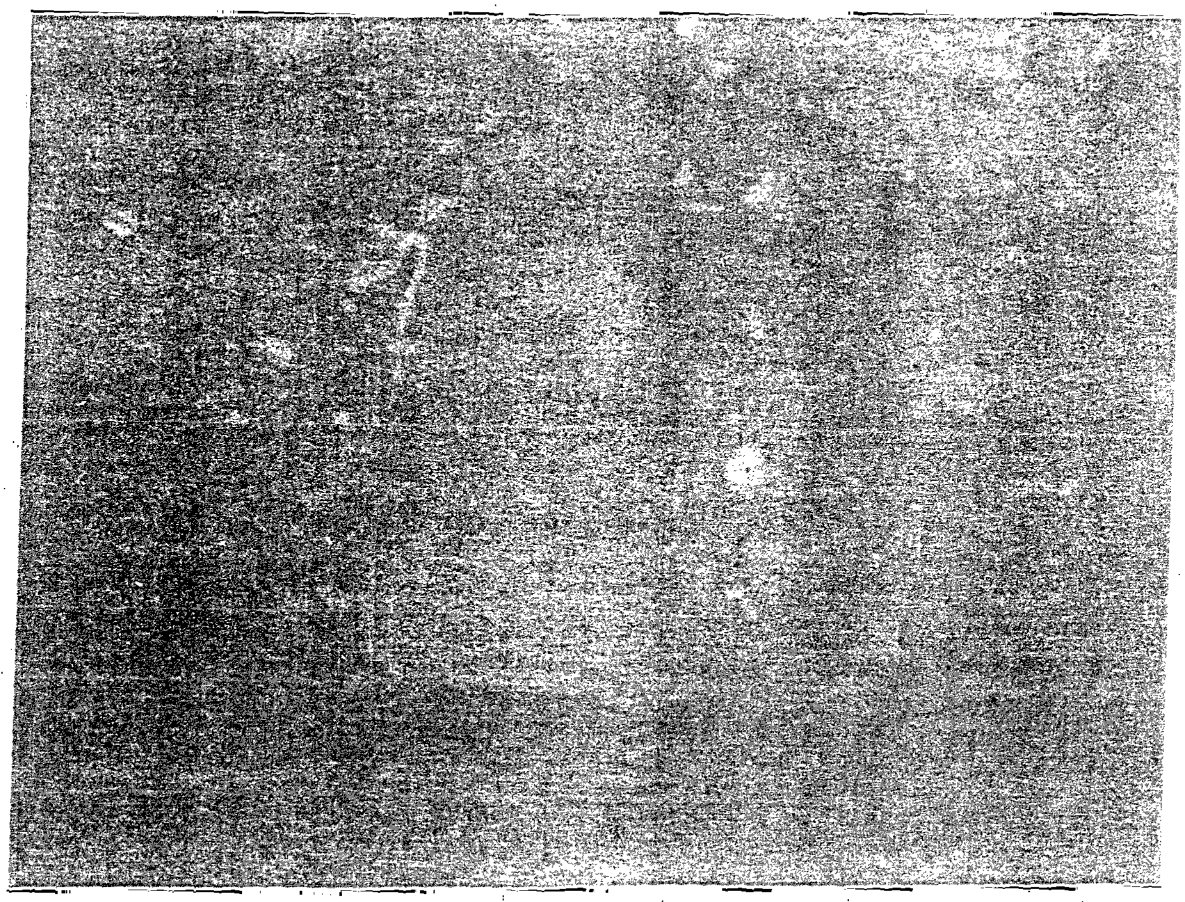
The object was identified as a billet former (used to make steel billets). The owner of the property (3151 S. California) was identified by Mr. Brad Benning as the Metropolitan Water Reclamation District of Chicago. The property was leased to M.S.

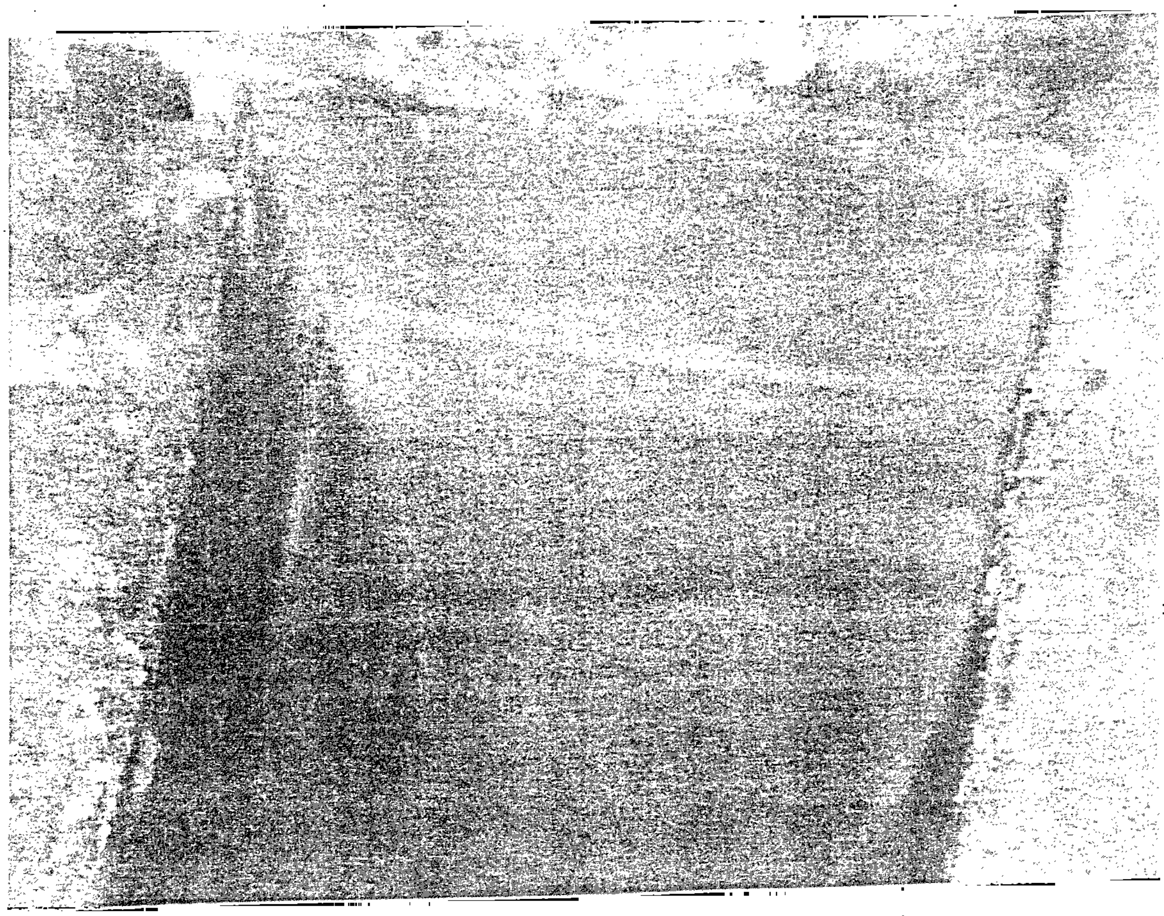
Kaplan Co. (contact is Joe Blandi at 708/756-0400) who subleased the warehouse to JPIT Melt Shop. JPIT apparently left the site about three years ago.

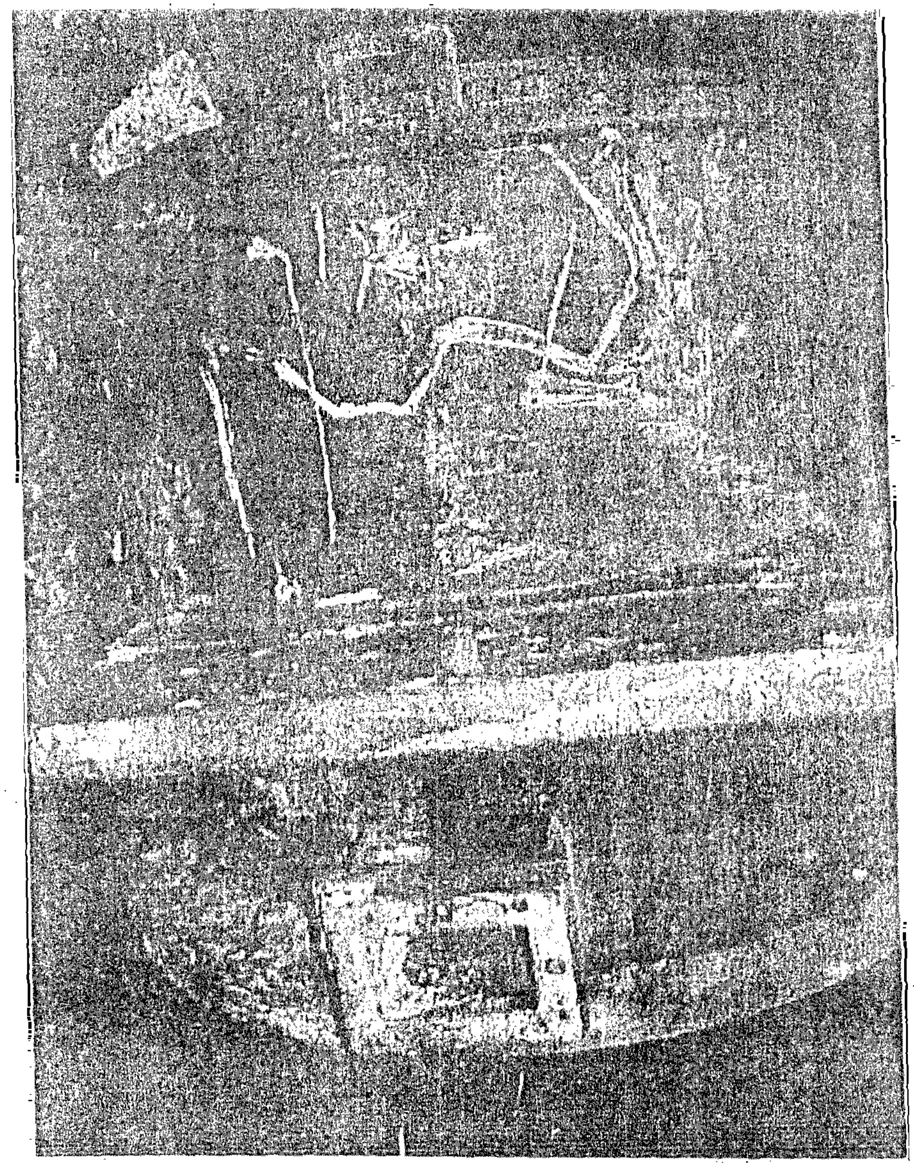
Prior to leaving, the inspectors discussed their findings with Mr. Brad Benning of USEPA and provided him with a couple "C-RAM" signs for posting on the device. A copy of the CRCPD Waste Broker listing was also provided to Mr. Benning. Mr. Benning assured the inspectors that the site would be secured and stated that he appreciated the help.

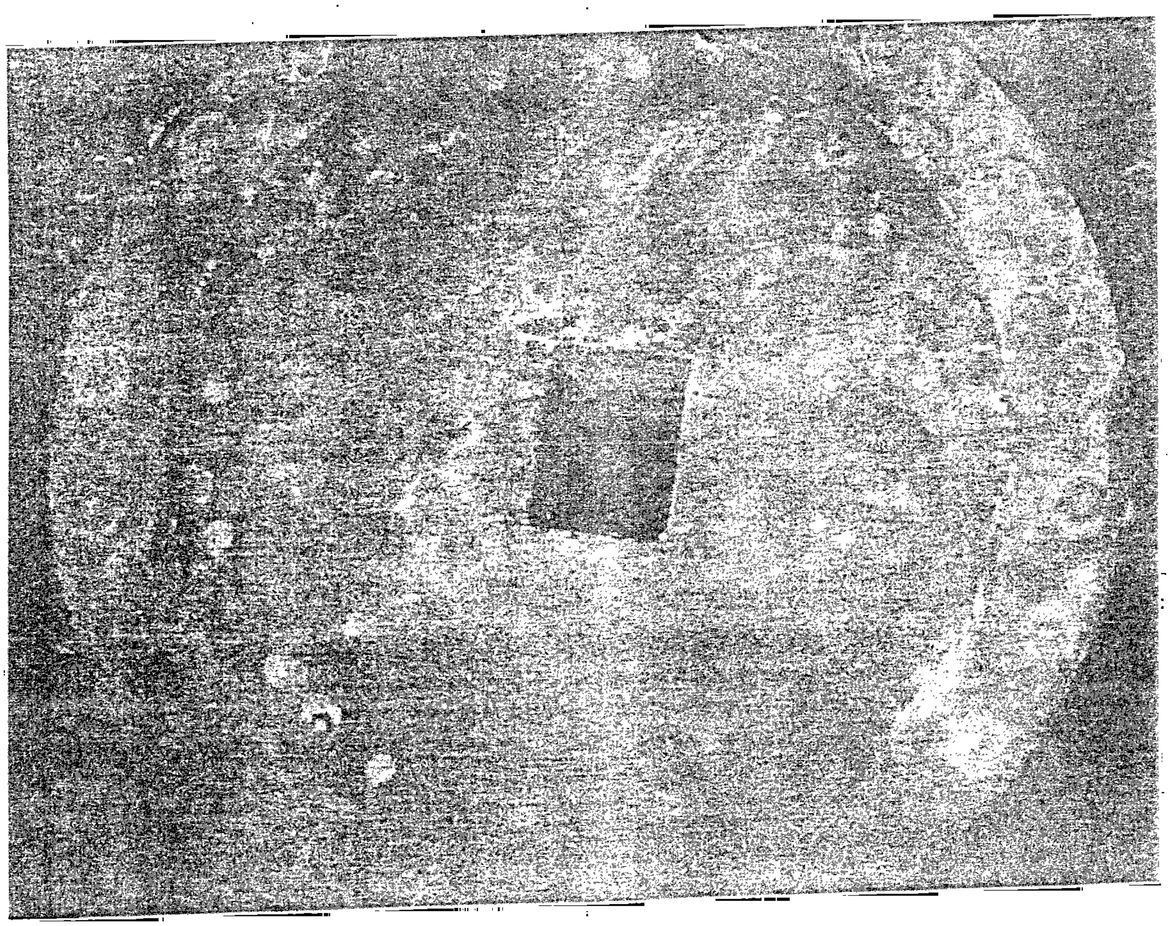
Pending satisfactory disposition of the material found at the site, this matter may be considered closed.

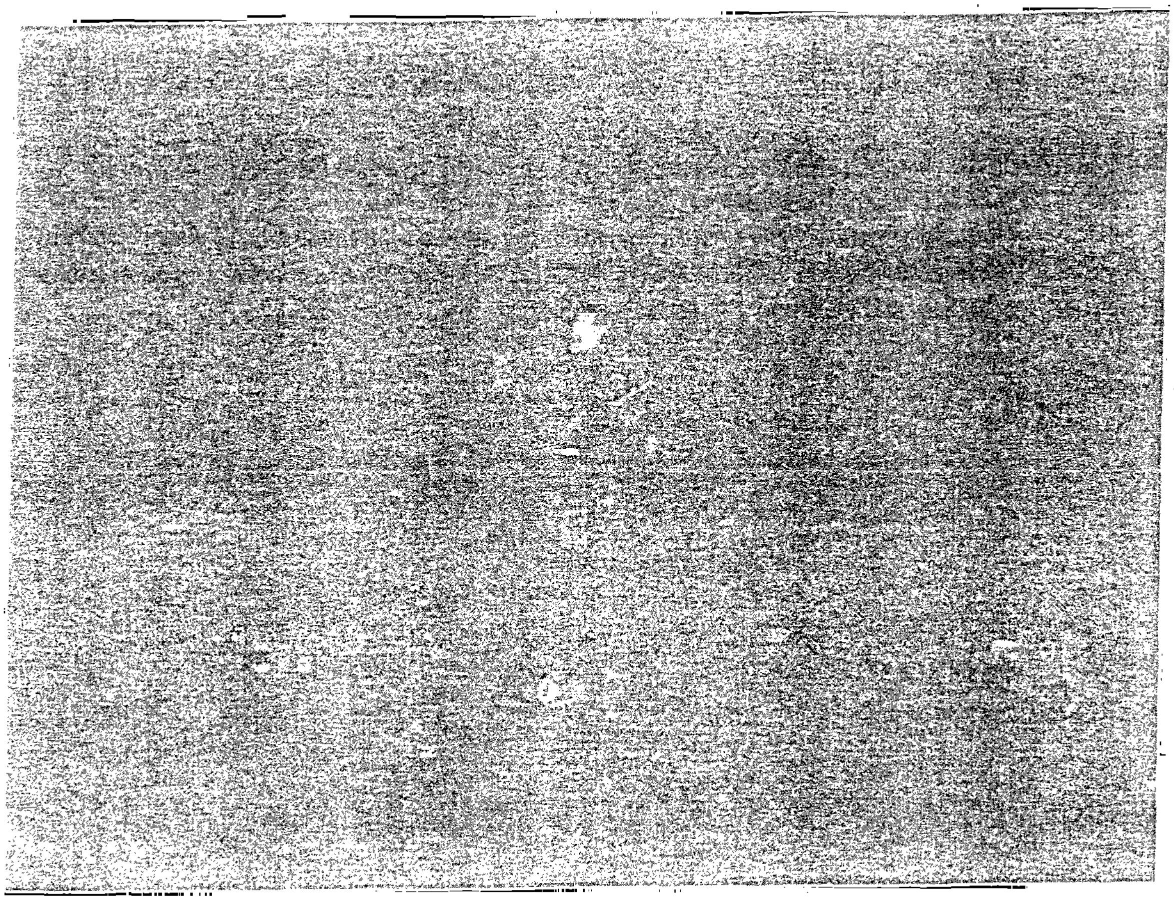












BTI-F11 DOSPEC (G) v2.07
former.001
Billet former next to Cozzi; Chicago; 80 uR/hour at opening; Cs-137;
April 6, 2001; ASG:RGM.
Run started at:Fri Apr 06 12:38:07 2001
Duration (s): 300
ROI-L: 0 ROI-R: 0
ROI Total Area: 0 , Net Area: 0
ROI Centroid: 0.00 keV
ROI Count rate: 0.000000 counts/sec
Total Count rate: 870.481201 counts/sec
Dead Time (per cent): 14.037964
Calibration : zero (ch) 11.6590
Calibration : gain (keV/ch) 11.7613

Channel:Counts

0:	0	44:	3290	88:	8	132:	9	176:	4
1:	0	45:	3007	89:	6	133:	7	177:	0
2:	0	46:	2790	90:	15	134:	2	178:	0
3:	0	47:	2718	91:	7	135:	4	179:	0
4:	0	48:	2548	92:	18	136:	3	180:	0
5:	0	49:	2462	93:	7	137:	7	181:	0
6:	0	50:	2226	94:	5	138:	3	182:	1
7:	0	51:	2127	95:	5	139:	1	183:	0
8:	0	52:	1793	96:	9	140:	2	184:	2

9:	0	53:	1716	97:	10	141:	0	185:	1
10:	0	54:	1582	98:	6	142:	1	186:	0
11:	1	55:	1409	99:	5	143:	1	187:	0
12:	0	56:	1438	100:	8	144:	1	188:	0
13:	0	57:	1250	101:	5	145:	3	189:	0
14:	0	58:	1289	102:	7	146:	1	190:	0
15:	0	59:	1162	103:	12	147:	1	191:	0
16:	1	60:	1152	104:	8	148:	1	192:	0
17:	14	61:	1104	105:	8	149:	0	193:	1
18:	211	62:	1094	106:	7	150:	1	194:	1
19:	1330	63:	1230	107:	3	151:	3	195:	0
20:	3317	64:	1304	108:	4	152:	0	196:	1
21:	5725	65:	1619	109:	4	153:	0	197:	0
22:	7220	66:	1849	110:	5	154:	0	198:	0
23:	8258	67:	2171	111:	5	155:	0	199:	3
24:	9613	68:	2193	112:	5	156:	0	200:	0
25:	9939	69:	1934	113:	1	157:	0	201:	2
26:	9984	70:	1339	114:	4	158:	1	202:	0
27:	10170	71:	834	115:	2	159:	1	203:	0
28:	10267	72:	430	116:	6	160:	3	204:	0
29:	9760	73:	188	117:	1	161:	1	205:	0
30:	9402	74:	63	118:	3	162:	3	206:	1
31:	9174	75:	39	119:	2	163:	0	207:	2
32:	8586	76:	20	120:	7	164:	0	208:	0
33:	8027	77:	18	121:	2	165:	0	209:	1
34:	7278	78:	15	122:	3	166:	2	210:	0
35:	6757	79:	14	123:	1	167:	0	211:	1
36:	6337	80:	17	124:	1	168:	1	212:	1
37:	5773	81:	15	125:	2	169:	0	213:	0
38:	5077	82:	7	126:	3	170:	2	214:	0
39:	4723	83:	17	127:	2	171:	1	215:	2
40:	4265	84:	10	128:	3	172:	0	216:	0
41:	4147	85:	8	129:	0	173:	1	217:	0
42:	3728	86:	5	130:	3	174:	1	218:	0
43:	3469	87:	8	131:	6	175:	1	219:	0

POWERSTOP HANDLE™ SAMPLING PROCEDURE

1. **Load Sampling Device**
   Insert EasyDraw Syringe™ into the appropriate slot (5 or 10-gram heavy, 5 or 10-gram medium, 5 or 10-gram light or 13 gram position) on the Powerstop Handle™ device and remove end cap from syringe.

   EPA Method 5035 Recommended 5-gram slot positions:

   - Use the heavy position for dense clay
   - Use the light position for dry sandy soil
   - Use the medium position for all others.

2. **Collect Sample**
   Push EasyDraw Syringe™ into a freshly exposed surface of soil until the syringe is full. Continue pushing until the soil column inside the syringe has forced the plunger to the stopping pint. (**Note**: unlike other sample collection devices, there is no headspace air in the syringe to displace.)

   EasyDraw Syringe™ delivers approximately 5, 10, or 13 grams. Actual weight will be determined at the laboratory. No scale or balance required in the field.

3. **Eject Sample Into Vial**
   Remove the syringe from the Powerstop Handle™ device and insert the syringe into the open end of 40-ml vial, and eject sample into pre-tared vial by pushing on the syringe plunger. Avoid getting dirt on the threads of the 40-ml vial.

   Cap vial immediately and put on ice or in an environment maintained at 4°C. No preservation required if laboratory receives within 48 hours of sampling.
   Refill and cap syringe for dry weight and percent moisture determination.